

# **CURRENT KNOWLEDGE IN PSYCHIATRIC EPIDEMIOLOGY**

**November 26<sup>th</sup> to 27<sup>th</sup>, 2009**

**Oulu, Finland**

**Program and abstracts**

**Organisers:**

Oulu Psychiatric Epidemiology Society (OPES)

Graduate School of Psychiatry

Department of Psychiatry, Oulu University Hospital

Department of Psychiatry, University of Oulu

**Dear participants,**

Welcome to the Current Knowledge in Psychiatric Epidemiology conference, Thursday November 26th to Friday November 27th, 2009 in Oulu, Finland. The conference is organised by the Oulu Psychiatric Epidemiology Society (OPES) in collaboration with the Graduate School of Psychiatry, University of Oulu and Oulu University Hospital. The conference venue is the Medical Faculty of the University of Oulu (Auditorium 101A, address: Aapistie 5A).

During the conference days we are pleased to offer high quality lectures about the epidemiology of most important psychiatric phenomena. We wish to highlight some of the current knowledge of psychiatric epidemiology, and to offer high quality education and exchange of ideas in psychiatric epidemiological research in Finland and abroad.

Welcome to Oulu and enjoy the conference!

Conference Organising Committee

Current Knowledge in Psychiatric Epidemiology

Jouko Miettunen  
Erika Jääskeläinen  
Antti Alaräsänen  
Marianne Haapea  
Jenni Koivukangas  
Anu Luukkonen  
Jani Moilanen  
Juha Veijola

## Programme

Thursday 26.11.2009

- 8.00 **Registration desk opens**  
8.45-9.15 **Coffee**  
9.15-9.30 **Opening of the conference**  
Adjunct Professor Jouko Miettunen, Oulu Psychiatric Epidemiology Society  
**Session 1, chair Academy Research Fellow Juha Veijola**
- 9.30-10.15 **European epidemiological cohort studies**  
Professor Marjo-Riitta Järvelin, National Institute for Health and Welfare, Oulu, Finland;  
Imperial College London, United Kingdom
- 10.15-11.00 **Studies on psychosis prodrome - Concepts in clinical practice and epidemiology**  
Professor Peter Jones, University of Cambridge, United Kingdom
- 11.00-12.30 **Lunch**  
11.30-12.30 **Poster session**  
**Session 2, chair Adjunct Professor Jouko Miettunen**
- 12.30-13.15 **Genome-wide analysis of psychiatric disorders**  
Adjunct Professor Tiina Paunio, National Institute for Health and Welfare,  
Helsinki, Finland
- 13.15-14.00 **New possibilities of register studies in psychiatry in Finland**  
Professor Mika Gissler, National Institute for Health and Welfare, Helsinki, Finland
- 14.00-14.30 **Coffee**  
14.30-15.15 **Psychiatric follow-up of the school massacres in Jokela and Kauhajoki**  
Professor Mauri Marttunen, National Institute for Health and Welfare, Helsinki,  
Finland

Friday 27.11.2009

- 8.45 **Registration desk opens**  
9.15-9.45 **Coffee**  
**Session 3, chair Professor Matti Isohanni**
- 9.45-10.30 **Differential epidemiology of schizophrenia and bipolar disorder**  
Professor Robin Murray, Institute of Psychiatry, London, United Kingdom
- 10.30-11.15 **Epidemiology of mental disorders in Finland: The Health 2000 study**  
Adjunct Professor Jaana Suvisaari, National Institute for Health and Welfare,  
Helsinki, Finland
- 11.15-11.45 **Lunch**  
11.45-12.45 **Poster session**  
**Session 4, chair Professor Irma Moilanen**
- 12.45-13.30 **What can epidemiology of depression and brain imaging learn from each other?**  
Professor Hasse Karlsson, University of Helsinki, Helsinki, Finland
- 13.30-14.15 **The cognitive phenotype and functional neurobiology of autism, ADHD and schizophrenia: Overlaps and differences**  
Professor Sven Bölte, Central Institute of Mental Health, Mannheim, Germany
- 14.15-14.45 **Coffee**  
14.45-15.30 **MRI studies in psychiatry - Will psychiatry be neurology some day?**  
Senior Clinical Research Associate Graham Murray, University of Cambridge, United  
Kingdom
- 15.30-15.45 **Closing of the conference**

## Invited speakers – Oral presentations

- O01 Järvelin Marjo-Riitta, Professor.**  
National Institute for Health and Welfare, Oulu, Finland. Imperial College London, United Kingdom.  
**European epidemiological cohort studies**
- O02 Jones Peter B., Professor.**  
University of Cambridge, United Kingdom.  
**Studies on psychosis prodrome – Concepts in clinical practice and epidemiology**
- O03 Paunio Tiina, Adjunct Professor.**  
National Institute for Health and Welfare, Helsinki, Finland.  
**Genome-wide analyses of psychiatric disorders**
- O04 Gissler Mika, Professor.**  
National Institute for Health and Welfare, Helsinki, Finland. Nordic School of Public Health, Gothenburg, Sweden.  
**New possibilities of register studies in psychiatry in Finland**
- O05 Marttunen Mauri, Professor.**  
National Institute for Health and Welfare, Helsinki, Finland.  
**Psychiatric follow-up of the school massacres in Jokela and Kauhajoki**
- O06 Murray Robin, Professor.**  
Institute of Psychiatry, London, United Kingdom.  
**Differential epidemiology of schizophrenia and bipolar disorder**
- O07 Suvisaari Jaana, Adjunct Professor.**  
National Institute for Health and Welfare, Helsinki, Finland  
**Epidemiology of mental disorders in Finland: The Health 2000 study**
- O08 Karlsson Hasse, Professor.**  
University of Helsinki, Helsinki, Finland.  
**What can epidemiology of depression and brain imaging learn from each other?**
- O09 Bölte Sven, Professor.**  
Central Institute of Mental Health, Mannheim, Germany.  
**The cognitive phenotype and functional neurobiology of autism, ADHD and schizophrenia: Overlaps and differences**
- O10 Murray Graham, Senior Clinical Research Associate.**  
University of Cambridge, United Kingdom.  
**MRI studies in psychiatry – Will psychiatry be neurology some day?**

## Poster presentations

- P01** Abdel-Khalek Ahmed. Prevalence of reported chronic fatigue syndrome in a survey of 3,465 university students in Kuwait.
- P02** Chen Chiao-Chicy, *et al.* Causes of death of alcohol dependence: a case-control study in Taiwan.
- P03** Gyllenberg David, *et al.* Childhood predictors of later psychiatric hospital treatment. Findings from the Finnish Nationwide 1981 Birth Cohort Study.
- P04** Haaepa Marianne, *et al.* Use of inverse probability weighting to adjust for non-participation – Estimating brain volumes in schizophrenia.
- P05** Haravuori Henna, *et al.* Jokela school shooting recovery study - psychosocial support.
- P06** Harkonmäki Karoliina, *et al.* Childhood adversities and use of psychotropic drugs.
- P07** Heikura Ulla, *et al.* Early risk factors associated with mild cognitive limitations in childhood.
- P08** Hurtig Tuula, *et al.* Associations between prodromal symptoms of psychosis and inattention and inattention / hyperactivity symptoms.
- P09** Karlsson Linnea, *et al.* Comparison of risk factors and one-year outcome between bipolar and unipolar depression in adolescents.
- P10** Luukkonen Anu-Helmi, *et al.* Bullying behaviour in relation to psychiatric disorders, suicidal behavior and physical health among adolescents.
- P11** Miettunen Jouko & Raevuori Anu. Temperament in Axis I Psychiatric Disorders – A Meta-Analysis.
- P12** Moghaddam Malek Mohammad Ghadimi & Tabatabaee Foozieh Hoseini. Epidemiological study of psychiatric disorders in the medical science students.
- P13** Noorian Zahra, *et al.* Toward the contextualization of the relation between thought-action-fusion (TAF) beliefs and obsessive compulsive disorder: the role of cultural and religious symbols.
- P14** Penttilä Matti, *et al.* The relation between duration of untreated psychosis (DUP), clinical outcome and brain morphology in schizophrenia within the Northern Finland 1966 Birth Cohort.
- P15** Prina A. Matthew, *et al.* A Cross-Cultural Study of the Prevalence of Anxiety and its Correlates amongst Older Adults in Developing Countries.
- P16** Raevuori Anu. The effect of parenting on the stability of self-esteem is larger among adolescent girls compared to boys.
- P17** Rautanen Mika & Lauerma Hannu. Mentally ill offending male often gets schizophrenia diagnosis late and not until imprisoned.
- P18** Tabatabaee Foozieh Hosseini & Moghaddam Malek Mohammad Ghadimi. Relationship of Pregnancy Anxiety in its Different Periods and Sexual Satisfaction.
- P19** Therman Sebastian, *et al.* Predicting psychiatric hospital care among adolescent outpatients with the Prodromal Questionnaire.
- P20** Welcome Menizibeya Osain & Pereverzev Vladimir Alekseevich. A Classical Model of Alcohol Use: Efficiency of Glucose Homeostasis and Cognitive Functions of Moderate Alcohol Users and Abstainers.
- P21** Siira Virva, *et al.* Long-term stability of MMPI measures in adoptees with high genetic risk for schizophrenia and their controls.

# ABSTRACTS

## INVITED SPEAKERS

**O02**

**STUDIES ON THE PSYCHOSIS PRODROME - CONCEPTS IN CLINICAL PRACTICE AND EPIDEMIOLOGY**

**Jones Peter B., Professor**

Department of Psychiatry, University of Cambridge, United Kingdom

**ABSTRACT**

The prodrome to psychotic illness is an enticing prospect for the clinician. It suggests an identifiable, non-psychotic mental state that evolves into or presages a psychotic syndrome and that may be treatable such that the evolution is prevented. The logic is from the realm of screening.

Unfortunately, the prodrome exists only as a retrospective concept, derived from careful clinical histories and research involving people who already have psychosis and informants looking back to the pre-psychotic state. This reveals interesting phenomena such as the prevalence of emotional and sleep disturbance and what appear to be negative symptoms before positive symptoms arise, but the fundamental problem is that these individuals have a 100% chance of developing psychosis. The features are, in fact, common with very low predictive value in the general population for syndromes as rare as schizophrenia. In a clinical arena where the probability of mental illness is higher, the prediction is better.

The field has moved on in two ways. First, we now use the concept of the at-risk mental state, where the syndrome is enriched by the inclusion of features and fragments of the positive psychotic state, itself, of disability and deterioration also found in the full disorder, and of causal components such as genetic risk. We also now know that psychotic-like experiences are relatively common in childhood and adolescence, so much so that they may even be developmentally normal; it is their persistence that is pathological at that age, not their presence.

This presentation will review concepts of screening as applied to early detection of psychosis, and will describe current clinical efforts and policies in psychosis services the UK.

O03

## GENOME-WIDE ANALYSIS OF PSYCHIATRIC DISORDERS

**Paunio Tiina, Adjunct Professor**

National Institute for Health and Welfare and Helsinki University Central Hospital, Helsinki, Finland

### ABSTRACT

The availability of high throughput technology for genotyping has opened the field of genetics to genome-wide association studies (GWAS). In the last few years hundreds of reports of GWAS for heritable traits, including reports for many psychiatric diseases such as attention deficit hyperactivity disorder (ADHD), autism, bipolar disorder, major depressive disorder, and schizophrenia (reviewed in 1). However, despite extensive genotyping in well-defined datasets, only a small part of the genetic risk for any of these diseases has been explained.

While some of the unexplained variance is likely due to other common SNPs with very small effects or SNPs that are not tagged by the arrays, the remaining variance may also be due to rare SNPs, copy number variants, gene-gene or gene-environment interactions, and epigenetic effects. It is also plausible that current diagnostic categories are likely to be inadequate for genetic studies, and genetic heterogeneity reduces power. Thus, application of endophenotypes or other feature or domains closer related to underlying pathogenic mechanisms may provide additional insight into the genetic susceptibility of psychiatric diseases.

The early findings on GWAS for psychiatric diseases include replicated copy number variant associations for schizophrenia and autism, a genomewide significant association for bipolar disorder, and a significant association in a combined schizophrenia-bipolar data set. Three recent reports on schizophrenia, performed by three international consortia and comprising altogether several thousand of cases and controls, yielded at evidence for significant association with several markers spanning the major histocompatibility complex (MHC) region on chromosome 6p21.3-22.1, one of those studies including also patients from Finland (2). The results provide molecular genetic evidence for a substantial polygenic component to the risk of schizophrenia involving thousands of common alleles of very small effect. Together, these findings open exciting avenues for future studies on etiology of that devastating disorder.

**References:** 1) Psychiatric GWAS Consortium Coordinating Committee. *Am J Psychiatry* 2009;166:540–556.  
2) Stefansson *et al.* *Nature*. 2009;460(7256):744-7.

## NEW POSSIBILITIES OF REGISTER STUDIES IN PSYCHIATRY IN FINLAND

### Gissler Mika, Professor

National Institute for Health and Welfare, Helsinki, Finland; Nordic School of Public Health, Gothenburg, Sweden

#### ABSTRACT

The Nordic countries have extremely good possibilities for register-based studies. Also Finland has a long tradition to collect population and health statistics. The first modern registers on cancer and health personnel were started in the 1940-1950s, when improved computers became available. The introduction of personal identification number for all citizens and permanent residents in 1964-1968 substantially improved the possibilities to run high quality registers. This led to introduction of several new health registers in the 1970s and 1980s.

The majority of Finnish health registers are kept for administrative and statistical purposes, but the current data protection legislation allows their use in scientific research. Besides science-friendly legislation, the other main prerequisite for register-based research is the high quality of existence registers. In Finland, several data quality studies have shown that the routinely collected health and social welfare registers have an excellent completeness and good data validity.

For psychiatric research, the Hospital Discharge Register (run by THL National Institute for Health and Welfare) and Cause-of-Death Register (run by Statistics Finland) are the most used registers. Complete data on inpatient care in all hospitals, pensions due to mental health disorders, and causes-of-death, including person identification numbers and data on diagnoses, data, are available since the late 1960s. These three registers have been used for example in studies estimating life expectancies and mortality rates among population with inpatient care or pension due to mental health disorders.

Since the 1990s, new register sources have been available in Finland. The Hospital Discharge Register has been completed since 1994-1995 with information on institutional care at social institutions, such as institutions for care of people with intellectually disability or dementia. Hospital outpatient visits in specialised health care in public hospitals have been collected in the Hospital Discharge Register since 1998. These both data sources can be used to identify people with mental health disorders, even though data on diagnosis is relatively limited in data from social institutions and data on diagnosis at outpatient care remained incomplete for the first years of data collection due to lacking DRG system (Diagnosis-Related Groups) for psychiatry.

The third novel register contains data on reimbursed medicine at Social Insurance Institution. The data has been collected since 1994 for all residents of Finland, and the register includes information on the purchases of drugs that have been reimbursed under the health insurance scheme. All pharmacies report monthly information on purchasers' background, on dispensing, on prescribing physician, and on the purchased drug. Also the dosage and indication as written by the physician are also included in the register, but seldom used in research due to their complexity. The register does not include information on over-the-counter medicines, medicines used in hospitals or non-reimbursable drugs.

Both cross-sectional and longitudinal register-based studies in psychiatry are feasible in Finland. Since the register data have been collected for a longer time, also trend studies can easily be done, even repeatedly. The Finnish legislation allows combining register data to data from other sources – such as medical records, questionnaires, or samples from biobanks – after receiving the requested permissions and informed consent from the respondents and patients. For older years (before 1999), the request of informed consent can even be exempted in certain cases. Strict data protection rules and practices are, however, followed. As a rule, only unidentified data are given to researchers to ensure the highest possible level of confidentiality and privacy of the registered people.

The main problem in the Finnish health information system is the lack of information on primary health care. For psychiatric studies, this is very essential due to the continuing deinstitutionalisation of mental health services. Hopefully this major limitation will be solved after the national electronic patient journal system is in use within few years.

As a conclusion, information from health and social welfare registers has been utilised in research for decades, but their use can substantially be intensified. Vigorous efforts should be made to ease the sometimes very complex and time consuming process to receive the study permissions and the data. Also the documentation of register sources and the training of researchers can further be improved, even though the Finnish Information Centre for Register Studies (<http://retki.stakes.fi/EN/index.htm>) has made an excellent job in promoting register-based studies, improving researchers' skills in register studies, and creating a continuous the communication between register-keeping organizations and data protection authorities.

**PSYCHIATRIC FOLLOW-UP OF THE SCHOOL MASSACRES IN JOKELA AND KAUHAJOKI****Marttunen Mauri<sup>1,2</sup>, Professor****Turunen Tuija<sup>3</sup>, Helin Janne<sup>1</sup>, Murtonen Kalle<sup>1</sup>, Berg Noora<sup>1</sup>, Kiviruusu Olli<sup>1</sup>, Haravuori Henna<sup>1</sup>, Suomalainen Laura<sup>1,2</sup>**

<sup>1</sup>National Institute for Health and Welfare, Helsinki, Finland; <sup>2</sup>Department of Adolescent Psychiatry, Helsinki University Central Hospital, Finland; <sup>3</sup>Department of Psychiatry, Seinäjoki Central Hospital, Hospital District of Etelä-Pohjanmaa, Finland

**ABSTRACT**

**Objectives:** Jokela and Kauhajoki school shooting recovery studies were initiated after the devastating shooting events in Finland. The aim is to evaluate the long term effects after such traumatising in adolescents and young adults. Further, experiences of various types of support are studied. This presentation will review preliminary results from the studies.

**Methods:** Questionnaires designed for these controlled two year follow-up studies were administered four to five months after the incident, second will be a year and third two years after the first questionnaire. Diagnostic interviews are utilized at one year. All the exposed students were invited to take part as well as control schools' students. The Impact of Event Scale (IES) is used to assess the posttraumatic distress and General Health Questionnaire (GHQ) to evaluate recent changes in general psychological symptoms.

**Results:** 231 (49%) of Jokela students completed the first questionnaire. Most of the students were exposed significantly. Probable PTSD (IES $\geq$ 35) was observed in 27 % of the girls and 7 % of the boys. OR for exposure in this group was 6.4 (95% CI 3.5-10.5). Severe/extreme exposure and being female increased significantly the odds. 42% of the girls and 16% of the boys had psychological symptoms (GHQ $\geq$ 9). 235 (60%) of the Kauhajoki students completed the first questionnaire. About half of the students were exposed at significant levels. IES $\geq$ 35 was observed in 19% but in 33% of significantly or more severely exposed.

**Conclusions:**

The more severe the exposure the greater amount of posttraumatic distress and general psychological symptoms were observed.

**O06**

**DIFFERENTIAL EPIDEMIOLOGY OF SCHIZOPHRENIA AND BIPOLAR DISORDER**

**Murray Robin, Professor**

Institute of Psychiatry, London, United Kingdom

**ABSTRACT**

Both schizophrenia and bipolar disorder have their most frequent onset in early adult life. However, schizophrenia is more common in males while bipolar disorder is equally common in both genders. Schizophrenia is also more common in large urban areas while bipolar disorder is equally distributed in urban and rural areas. Schizophrenia is associated with an increased exposure to obstetric events, and with markers of developmental impairment. In contrast children destined to develop bipolar disorder are at least as good as the general population in motor and cognitive development.

## MENTAL HEALTH IN THE FINNISH ADULT POPULATION

**Suvisaari Jaana, Adjunct Professor**

National Institute for Health and Welfare, Helsinki, Finland

### ABSTRACT

**Objectives:** Health 2000 was a health interview and examination survey carried out in Finland from autumn 2000 to spring 2001. Together with its two substudies, Psychoses in Finland (PIF) and Mental Health in Early Adulthood (MEAF), it has provided a comprehensive picture of mental disorders in the Finnish adult population.

**Methods:** A nationally representative, two-stage cluster sample of the Finnish adult population, comprising 1894 persons aged 18-29 years (the young adult sample), and 8028 persons aged 30 years and over (the adult sample) was drawn from the population register. Also institutionalized and homeless people were included. The adult sample was interviewed with the Munich version of the Composite International Diagnostic Interview (CIDI), which provided 12-month prevalence estimates of anxiety, mood, and substance use disorders. In addition, they were screened for psychotic and bipolar I disorders using the CIDI psychosis and mania sections, self-reported diagnoses, medical examination, and national registers. Those selected by the screens were re-interviewed with the Structured Clinical Interview for DSM-IV (SCID-I), and all their case-notes from mental health and primary care were obtained. Best-estimate DSM-IV diagnoses were formed by combining the interview and case note data. Register diagnoses were used to estimate the effect of the nonresponders. In the young adult sample, a questionnaire focusing on mental health was sent to the participants. Based on a mental health screen, all screen-positives and a random sample of screen-negatives were asked to participate in a mental health assessment, consisting of the SCID-I interview and neuropsychological assessment. We also obtained case-notes from mental health and primary care, and final diagnostic assessment was based on all available information.

**Results:** In the adult sample, the 12-month prevalences of depressive, alcohol use and anxiety disorders were 6.5%, 4.5% and 4.1%, respectively. The lifetime prevalence of all psychotic disorders in the adult sample was 3.1% and rose to 3.5% when register diagnoses of the nonresponder group were included. In the young adult sample, forty percent had at least one lifetime DSM-IV Axis I disorder, and 15% had a current disorder. The most common lifetime disorders were depressive disorders (17.7%) followed by substance abuse or dependence (14.2%) and anxiety disorders (12.6%).

**Conclusions:** The 12-month prevalences of mental disorders in the adult sample and the lifetime prevalences in the young adult sample were in the middle of the range observed in other developed countries. The lifetime prevalence of psychotic disorders was much higher than in previous general population surveys, probably because of the more comprehensive screening and the availability of case notes to complement interview data.

**References:** 1) Suvisaari J *et al.* Mental disorders in young adulthood. *Psychological Medicine* 2009;39: 287-299. 2) Perälä J *et al.* Lifetime prevalence of psychotic and bipolar I disorders in a general population. *Archives of General Psychiatry* 2007; 64:19-28. 3) Pirkola S *et al.* DSM-IV Mood-, anxiety- and alcohol use disorders and their comorbidity in the Finnish general population. Results for the Health 2000 study. *Social Psychiatry and Psychiatric Epidemiology* 2005; 40:1-10.

**O08**

**WHAT CAN EPIDEMIOLOGY OF DEPRESSION AND BRAIN IMAGING LEARN FROM EACH OTHER?**

**Karlsson Hasse, Professor**

University of Helsinki, Helsinki, Finland

**ABSTRACT**

The next challenge of psychiatric research is to reveal the mechanisms of depression. In my presentation I will focus on the problem of phenotypes in depression research and show new neurobiological research results that highlight this issue. Epidemiology can help neuroimaging in the effort of understanding disease mechanisms by providing better phenotypes than we currently have, and generating testable hypotheses by studying risk factors for and mediators and moderators of the illness. Neuroimaging, on the other hand, can help epidemiology by studying the neurobiological mechanisms of the new phenotypes and by accepting or rejecting the generated hypotheses. In this way both disciplines may in the future collaborate and benefit from each other.

**O09**

**THE COGNITIVE PHENOTYPE AND FUNCTIONAL NEUROBIOLOGY OF AUTISM, ADHD AND SCHIZOPHRENIA**

**Bölte Sven, Professor**

Central Institute of Mental Health, Mannheim, Germany

**ABSTRACT**

The clinical phenotype of autism spectrum disorders (ASS) is coined by impairments in social communication alongside with stereotypic behavior and narrow interests. The cognitive phenotype is not yet clearly defined, but it is probable that it is characterized by executive malfunction, problems in social cognition and attention to detail, which themselves have been associated with certain abnormalities in the brain. These neurocognitive constructs are also pivotal for the understanding of deviant behavior in other mental disorders, such as attention deficit hyperactivity disorder (ADHD) and schizophrenia. Nevertheless, comparative studies are few and the specificity of these neuropsychological alterations for each of the disorders is still underexamined. In this presentation, an overview is given on cognition and its neural correlates in ASS and examples of overlaps and differences in this regard to ADHD and schizophrenia.

**O10**

**MRI STUDIES IN PSYCHIATRY - WILL PSYCHIATRY BE NEUROLOGY SOME DAY?**

**Murray Graham, Senior Clinical Research Associate**

University of Cambridge, United Kingdom

**ABSTRACT**

In the late 19th and early 20th century, there was little distinction between psychiatry and neurology. For example, Freud trained as a neurologist, Wernicke trained as a psychiatrist, and our current top psychiatric journal, Archives of General Psychiatry, was previously known as Archives of Neurology and Psychiatry until it split into separate neurology and psychiatry journals in the mid 20th century. Recent biological psychiatry research, in particular progress made in brain imaging research, has again suggested the possibility of understanding psychiatric presentations at the brain level. I will discuss the relative success (and failure) of recent brain imaging research that purports to reunite psychiatry and neurology, before closing with some wild speculation on future developments.

# ABSTRACTS

## POSTER PRESENTATIONS

**P01**

**PREVALENCE OF REPORTED CHRONIC FATIGUE SYNDROME IN A SURVEY OF 3,465 UNIVERSITY STUDENTS IN KUWAIT**

**Abdel-Khalek Ahmed**

Department of Psychology, Kuwait University, Kuwait

**ABSTRACT**

**Background:** Fatigue is a common experience in the community and a major clinical manifestation as well. It is a complex symptom associated with many physiological, psychological and pathological processes. Fatigue accompanies a variety of psychiatric disorders especially anxiety and depression. However, its correlates and typology remain inadequately understood (Abdel-Khalek, 2007). Fatigue is distributed continuously within the population, from mild and transient states to chronic fatigue syndrome (CFS).

**Objective:** The Arab populations are underrepresented in this area. The aim of the present study was to estimate the prevalence rate of reported CFS in a probability sample of male and female Kuwaiti undergraduates.

**Methods:** A probability non-clinical sample of 3,465 volunteer Kuwaiti undergraduate men (n=1,745) and women (n=1,720) took part in the study. Their ages ranged between 16 and 43. They responded to the Arabic Scale of Chronic fatigue Syndrome (ASCFS). It consists of 20 items answered on a 5-point Likert format, anchored by 1=No and 5=Very Much. The scale has high alpha and test-retest reliability, as well as good criterion-related and factorial validity. The scale was administered anonymously to small groups of students in a classroom setting, during regular university hours.

**Results:** Women obtained significantly higher mean total score on the ASCFS than their male counterparts. The prevalence rate has been estimated on the basis of the percentage of subjects exceeding the mean+2 standard deviation. It was found that 2.4% of men and 5.8% of women fulfilled that criterion.

**Conclusion:** Women had significantly higher CFS prevalence rate than their male counterparts. Male and female students with high scores on the scale may need a kind of counseling or psychotherapy, namely cognitive behavior therapy.

**Contact information:** Abdel-Khalek, Ahmed. Department of Psychology, College of Social Sciences, University of Kuwait. P. O. Box 68168, 71962, Kaifan. Phone No: +965-24824730, Fax No: +965-24830157. Email: ahmedkuniv@hotmail.com

**CAUSES OF DEATH OF ALCOHOL DEPENDENCE: A CASE-CONTROL STUDY IN TAIWAN**

**Chen Chiao-Chicy, Kuo Chian-Jue, Tsai Shang-Ying**

Taipei City Psychiatric Center, Taipei City Hospital and Taipei Medical University, Taiwan

**ABSTRACT**

**Objectives:** The standard mortality ratio is higher in patients with alcohol dependence than those with major psychotic disorders such as schizophrenia. The purpose of this study is to investigate the clinical characteristics and risk factors of natural and unnatural death in a group of patients with alcohol dependence.

**Methods:** 1512 patients with alcohol dependence admitted in Taipei City Psychiatric Center from January 1986 to December 2003 were followed through 2005 by record linkage to the Death Certification System. Sixty-four subjects who died from either natural or unnatural causes during this period were matched with living controls randomly for age and sex. Demographic and clinical variables were collected from medical records.

**Results:** A total of 64 patients died during the study period. 43 cases were natural death, 12 cases were accidental death, one case was suicidal death, and the other one was homicidal death, but causes of 7 cases were unknown. All of them were male. The mean age is 41.5 for mortality cases and 39.4 for living controls. There are 3 variables that were found significantly associated with mortality. Namely, single and divorced of marital status, late onset of tolerance, and high fasting blood sugar. The prevalence of HBsAg positive is not differently distributed in both groups (11.3% and 7.7%, respectively).

**Conclusions:** This preliminary study revealed that the risk factors of mortality for patients with alcohol dependence were mainly physical, but some psycho-social factors should be paid attentions.

**CHILDHOOD PREDICTORS OF LATER PSYCHIATRIC HOSPITAL TREATMENT. FINDINGS FROM THE FINNISH NATIONWIDE 1981 BIRTH COHORT STUDY****Gyllenberg David<sup>1</sup>, Sourander Andre<sup>2,3</sup>, Niemelä Solja<sup>4</sup>, Helenius Hans<sup>5</sup>, Sillanmäki Lauri<sup>5</sup>, Piha Jorma<sup>2</sup>, Kumpulainen Kirsti<sup>6</sup>, Tamminen Tuula<sup>7</sup>, Moilanen Irma<sup>8</sup>, Almqvist Fredrik<sup>1</sup>**

<sup>1</sup>Department of Child Psychiatry, University of Helsinki, Finland; <sup>2</sup>Department of Child Psychiatry, University of Turku, Finland; <sup>3</sup>RBUP, Institute of Clinical Medicine, Tromsø University, Norway; <sup>4</sup>Department of Psychiatry, University of Turku, Finland; <sup>5</sup>Department of Biostatistics, University of Turku, Finland; <sup>6</sup>Department of Child Psychiatry, University of Kuopio, Finland; <sup>7</sup>Department of Child Psychiatry, University of Tampere, Finland; <sup>8</sup>Department of Child Psychiatry, University of Oulu, Finland

**ABSTRACT**

**Objective:** Psychiatric hospital treatment (PHT) is expensive and indicates a severe disorder. Investigation of the early identification of this small patient group has though been hindered by small samples or unsatisfactory assessment in childhood. The present study aims to study the predictive association between psychopathology at age eight using multi-informant assessment and later PHT.

**Method:** A nationwide birth cohort of Finnish children (n=5346) was assessed at age eight to obtain information about psychopathology using the Rutter parent and teacher reports and self-reports of depressive symptoms. The main outcome was admission to any hospital with a primary diagnosis of any psychiatric disorder according to the Finnish National Hospital Discharge Register between age 13 and 24.

**Results:** Between age 13 and 24, 6.2% of the males and 4.1% of the females had been admitted for PHT. Among males, PHT was independently predicted by non-intact family and adult reports of conduct and of emotional symptoms, while among females by self-reported depressive symptoms. However, the combination of conduct and emotional problems was the strongest predictor for PHT in both sexes. Admission due to psychosis among males was associated with childhood conduct, attention and emotional problems, but with emotional problems among females.

**Conclusions:** Psychopathology at age eight can be seen as a long-lasting increased risk of severe psychiatric disorders requiring hospital treatment in adolescence or early adulthood. Attention should be paid to self-reports among females and of comorbid conduct and emotional problems in both sexes in the early identification of this patient group.

**USE OF INVERSE PROBABILITY WEIGHTING TO ADJUST FOR NON-PARTICIPATION – ESTIMATING BRAIN VOLUMES IN SCHIZOPHRENIA**

**Haapea Marianne<sup>1,2</sup>, Veijola Juha<sup>1,3</sup>, Tanskanen Päivikki<sup>2</sup>, Jääskeläinen Erika<sup>1</sup>, Isohanni Matti<sup>1</sup>, Miettunen Jouko<sup>1,4</sup>**

<sup>1</sup> Department of Psychiatry, University of Oulu and Oulu University Hospital, Finland; <sup>2</sup> Department of Diagnostic Radiology, Oulu University Hospital, Finland; <sup>3</sup> Academy of Finland, Helsinki, Finland; <sup>4</sup> Institute of Health Sciences, University of Oulu and Unit of General Practice, Oulu University Hospital, Finland

**ABSTRACT**

**Purpose:** We present the use of inverse probability weighting (IPW) to the estimates of grey matter (GM), white matter (WM) and cerebrospinal fluid (CSF) volumes in subjects with schizophrenia. IPW is used to reduce the bias caused by non-participation.

**Methods:** Altogether 101 subjects with schizophrenia from the Northern Finland 1966 Birth Cohort (NFBC 1966) were invited to a psychiatric field survey conducted during 1999-2001. Volumes of GM, WM and CSF were compared between 54 participating schizophrenia and 100 non-psychotic control subjects. IPW by illness-related auxiliary variables was evaluated both in unadjusted and adjusted analyses. Auxiliary variables were gathered using register data, available also for non-participants. Adjusting variables were gathered in previous phases of the prospective NFBC 1966 project.

**Results:** In the unadjusted analyses IPW did not affect the estimates of GM and WM but IPW by disability pension and higher amount of treatment days due to psychosis increased the estimate of CSF in schizophrenia subjects. In the adjusted analyses, IPW led to smaller estimated mean volumes of GM in schizophrenia subjects. IPW by disability pension and higher amount of treatment days due to psychosis led to smaller estimated mean volumes of WM, and larger estimated mean volumes of CSF.

**Conclusions:** IPW can be used to improve estimation affected by non-participation by reflecting the true differences in the target population. The method presented in this study can be taken into consideration in various future studies, and can be used in handling the problem of selected non-participation.

## JOKELA SCHOOL SHOOTING RECOVERY STUDY - PSYCHOSOCIAL SUPPORT

Haravuori Henna<sup>1,2</sup>, Murtonen Kalle<sup>1</sup>, Suomalainen Laura<sup>1,3</sup>, Berg Noora<sup>1</sup>, Kiviruusu Olli<sup>1</sup>, Marttunen Mauri<sup>1,3</sup>

<sup>1</sup>National Institute for Health and Welfare, Helsinki, Finland; <sup>2</sup>Hospital District of Helsinki and Uusimaa, Kellokoski Hospital, Department of Adolescent Psychiatry, Finland; <sup>3</sup>Helsinki University Central Hospital, Department of Adolescent Psychiatry, Helsinki, Finland

### ABSTRACT

**Objectives:** In November 2007, a male student shot eight people and himself at Jokela High school, Finland. Traumatic events may cause multiform psychological symptoms. However, studies of posttraumatic stress and psychosocial support for adolescents are sparse. This study investigated types of psychosocial support available and adolescents' experiences. It is part of a controlled follow-up study aiming to evaluate the long term effects of traumatisation in adolescents.

**Methods:** The data were collected from a questionnaire answered by students of Jokela High school (n=231) five months after the school shooting. There were questions covering direct exposure, offered types of the support and their perceived effect. The Impact of Event Scale (IES) was used to assess the posttraumatic distress and General Health Questionnaire (GHQ-36) to evaluate recent changes in general psychological symptoms.

**Results:** Immediate support was offered to 69% of the Jokela students and 70% of them accepted the support. 68% reported that the support was at least sufficient. Immediate support was offered to 81% of the severely/extremely exposed. Crisis workers' support for the first week reached 57% of the students and 60% of them felt it had helped. Students reported consistently to have received support from their family or close ones. Support was also available from student care and third sector actors.

**Conclusions:** Support was offered to traumatised students from various sources and support was often experienced as helpful. Factors associated with insufficient support and what is effective in reducing psychological symptoms in a long run have to be further evaluated.

## CHILDHOOD ADVERSITIES AND USE OF PSYCHOTROPIC DRUGS

Harkonmäki Karoliina, Koskenvuo Markku, HeSSup study group

### ABSTRACT

**Objectives:** To investigate whether adverse childhood experiences, such as serious conflicts in the family and frequent fear of a family member, and poor child-parent relationships predict use of psychotropic drugs in adulthood.

**Methods:** A cohort of working aged Finns (Health and Social Support Study, N= 22 655) responded to a questionnaire and was followed from the beginning of the year 1998 to the end of the year 2006. Information on the use of psychotropic drugs (depression, psychosis, bipolar, anxiety, sleep) was based on prescription register administered by the Social Insurance Institution of Finland.

**Results:** The age- and gender-adjusted odds ratios, ORs, showed strong associations between childhood adversities and use of psychotropic drugs. The strongest association between childhood adversities and use of psychotropic drugs was found for psychosis, OR for those with multiple childhood adversities was 4.99 (95% CI 3.81-6.54). Approximately 3-fold greater risks for use of other psychotropic drugs (depression, bipolar, anxiety, sleep) was shown for those with multiple childhood adversities: depression 3.16 (2.69-3.70), bipolar 3.11 (2.19-4.41), anxiety 2.78 (2.34-3.30) and sleep 2.75 (2.25-3.37). In the analyses of specific childhood adversities, frequent fear of a family member showed the strongest association (psychosis, OR 2.39, 2.03-2.81). Poor child-mother relationship increased the risk of psychosis over 3-fold (OR 3.23, 2.46-4.25) and poor child-father relationship over 2-fold (OR 2.33, 1.90-2.85).

**Conclusion:** Our results indicate that childhood emotional experiences are more important factors affecting the risk of serious mental illnesses, such as schizophrenia as assumed before.

## EARLY RISK FACTORS ASSOCIATED WITH MILD COGNITIVE LIMITATIONS IN CHILDHOOD

Heikura Ulla<sup>1</sup>, Taanila Anja<sup>2</sup>, Rodriquez Alina<sup>3</sup>, Järvelin Marjo-Riitta<sup>2,4</sup>

<sup>1</sup>Department of Health Sciences, University of Oulu, Verve, Finland; <sup>2</sup>Department of Health Sciences, University of Oulu Finland; <sup>3</sup>Department of Psychology, Uppsala University, Sweden; <sup>4</sup>Department of Epidemiology and Public Health, Imperial College, London, UK

### ABSTRACT

**Objectives:** to explore pre- and perinatal factors associated with mild cognitive limitations in childhood among singleton children in Northern Finland Birth Cohort 1986 (NFBC 1986, N=8881) with a scope on fetal growth of the child, but also familial sociodemographic factors were included.

**Methods:** the children with mild lower cognitive limitations were separated by intelligence quotient (IQ) into borderline intellectual capacity (BIF, IQ 71-85, n=133) and intellectual disability (ID, IQ <71, n=99) groups. The data were based questionnaires filled by the mothers during pregnancy time and midwives in the antenatal clinics and also on antenatal hospital data.

**Results:** low maternal education and male gender had an independent effect on BIF, whereas maternal obesity, high parity, male gender as well as shorter birth length of the newborn were independent risk factors for ID.

**Conclusion:** some indicators of fetal growth were associated with ID but not with BIF.

**ASSOCIATIONS BETWEEN PRODROMAL SYMPTOMS OF PSYCHOSIS AND INATTENTION AND INATTENTION / HYPERACTIVITY SYMPTOMS**

**Hurtig Tuula<sup>1,2</sup>, Taanila Anja<sup>2,3</sup>, Veijola Juha<sup>4,5</sup>, Ebeling Hanna<sup>1</sup>, Mäki Pirjo<sup>5</sup>, Miettunen Jouko<sup>5</sup>, Kaakinen Marika<sup>2</sup>, Therman Sebastian<sup>6</sup>, Heinimaa Markus<sup>7</sup>, Joukamaa Matti<sup>8</sup>, Järvelin Marjo-Riitta<sup>9,10</sup>, Moilanen Irma<sup>1</sup>**

<sup>1</sup>Institute of Clinical Medicine, Department of Child Psychiatry, University of Oulu, Finland; <sup>2</sup>Institute of Health Sciences, University of Oulu, Finland; <sup>3</sup>Unit of General Practice, University Hospital of Oulu, Finland; <sup>4</sup>Academy of Finland, Helsinki, Finland; <sup>5</sup>Institute of Clinical Medicine, Department of Psychiatry, University and University Hospital of Oulu, Finland; <sup>6</sup>Department of Mental Health and Substance Abuse Services, National Institute for Health and Welfare, Helsinki, Finland; <sup>7</sup>Department of Psychiatry, University of Turku, Finland; <sup>8</sup>Social Psychiatry Unit, Tampere School of Public Health, University of Tampere, and Department of Psychiatry, Tampere University Hospital, Finland; <sup>9</sup>National Institute for Health and Welfare, Helsinki, Finland; <sup>10</sup>Department of Epidemiology and Public Health, Imperial College London, London, UK

**ABSTRACT**

**Objectives:** There is considerable evidence that attentional dysfunction, when measured with neuropsychological tests, is already present among clinically referred adolescent outpatients in the prodromal phase of psychosis. It is therefore likely that patients with prodromal symptoms of psychosis also exhibit higher rates of the core symptoms of ADHD, inattention and hyperactivity, but this issue has not previously been explicitly addressed. We examined the association between prodromal symptoms for psychosis and inattention/hyperactivity symptoms in a general adolescent population.

**Methods:** The sample was based on a population-based prospective mother-child birth cohort, the Northern Finland Birth Cohort (NFBC) 1986. In the 15-16 -year follow-up survey the adolescents completed the Youth Self-Report (YSR) questionnaire as well as a questionnaire that addressed prodromal symptoms of psychosis. Meanwhile, their parents assessed inattention and hyperactive symptoms of their offspring by completing the Strengths and Weaknesses of ADHD symptoms and Normal Behaviors (SWAN) questionnaire (N=5319). The cross-sectional associations between prodromal symptoms for psychosis and inattention/hyperactivity symptoms were studied with logistic regression models.

**Results:** The association between negative prodromal symptoms of psychosis and inattention symptoms, especially the dreamy type of inattention symptoms (e.g. difficulties in organizing tasks, loses things, is forgetful), was statistically significant among both genders. Prodromal symptoms, however, were not associated with hyperactivity symptoms.

**Conclusions:** The present findings demonstrate that an association between negative prodromal symptoms for psychosis and attentional dysfunction, which has been found in clinical samples, is also present in a general adolescent population.

**Contact:** Tuula Hurtig, PhD, Institute of Health Sciences, P.O.Box 5000, 90014 University of Oulu, Finland. Tel +358-8-5375685, Fax +358-8-5375661, e-mail: tuula.hurtig@oulu.fi.

## COMPARISON OF RISK FACTORS AND ONE-YEAR OUTCOME BETWEEN BIPOLAR AND UNIPOLAR DEPRESSION IN ADOLESCENTS

Karlsson Linnea<sup>1,2</sup>, Kiviruusu Olli<sup>1</sup>, Marttunen Mauri<sup>1,3</sup>, the Adolescent Depression Study Group

<sup>1</sup>National Institute for Health and Welfare, Dept of Mental Health and Substance Abuse Services;

<sup>2</sup>Turku University Central Hospital, Departments of Child and Adolescent Psychiatry; <sup>3</sup>University of Helsinki and Department of Adolescent Psychiatry, Helsinki University Central Hospital, Helsinki, Finland

### ABSTRACT

**Background:** Comparisons of unipolar and bipolar depression within the same study population of adolescents are scarce.

**Objectives:** We aimed at comparing selected risk factors and clinical characteristics between bipolar and unipolar depression during a one-year follow-up.

**Description:** The study population (80% females, mean age 16.3 years) comprised adolescents with either unipolar major depression (MDD) (n=151) or bipolar disorder (BPD) (n=27) derived from a sample of consecutive adolescent psychiatric outpatients (n=173) and a school control group (n=15) who were assessed at baseline (T1) and 12 months (T2). Comparisons between MDD and BPD were made on sociodemographics, comorbidity profile, one-year outcome, perceived social support and life events.

**Results:** At T1, adolescents with MDD reported significantly less perceived social support from their families than youths with BPD (p=0.04). Moreover, the frequency of negative life events during the preceding year being higher among MDD youths than in BPD approached significance (p=0.07). At T2, bipolar youths had lower levels of psychosocial functioning (GAF < 61) (75.4% vs 45.3% p=0.02) and they were less likely to have recovered from the index mood disorder episode than those with MDD (73.9% vs 53.0%; p=0.06). No differences in severity of depressive symptoms or anxiety or substance use disorder comorbidity were identified between BPD and MDD at T1 or T2.

**Conclusions:** The short-term outcome of BPD appears to be more chronic and impairing than that of MDD the effect is independent of co-occurring psychiatric diagnoses. Significant differences in psychosocial risk factors between MDD and BPD may be present.

**BULLYING BEHAVIOUR IN RELATION TO PSYCHIATRIC DISORDERS, SUICIDAL BEHAVIOR AND PHYSICAL HEALTH AMONG ADOLESCENTS**

**Luukkonen Anu-Helmi, Riala Kaisa, Hakko Helinä, Räsänen Pirkko**

Department of Psychiatry, University of Oulu, Finland

**ABSTRACT**

**Objectives:** The aim was to investigate the association of bullying behavior to psychiatric disorders, suicidal behavior, somatic illnesses and overweight in a sample of adolescent psychiatric patients.

**Methods:** The study sample consisted of 508 Finnish adolescents (age 12-17) admitted to psychiatric inpatient care between April 2001 and March 2006 from districts of Oulu and Lapland. DSM-IV psychiatric diagnoses and variables measuring suicidal behavior (i.e., suicide attempts and self-mutilation) and bullying behavior (i.e., being a victim or a bully or a bully-victim) were obtained from the Schedule for Affective Disorder and Schizophrenia for School-Age Children Present and Lifetime (K-SADS-PL).

**Results:** Logistic regression analyses showed that both among boys (OR=12.6, 95% CI=2.4-66.3,  $p=0.003$ ) and girls (OR=9.0, 95% CI=2.6-31.3,  $p=0.001$ ), having an externalizing disorder increased the likelihood for being a bully or a bully-victim. Conversely, having an internalizing disorder increased the likelihood for being a victim among boys (OR=3.4, 95% CI=1.3-8.7,  $p=0.013$ ), but not among girls. We also found a trend towards statistical significance that somatic illnesses (OR=2.4, 95% CI=1.0-6.2,  $p=0.062$ ) and overweight (OR=2.6, 95% CI=0.9-7.8,  $p=0.089$ ) are associated with being bullied among boys, but not among girls. In contrast, in girls, but not in boys, victims (OR=2.1, CI=1.0-4.1,  $p=0.037$ ) and bullies (OR= 3.3, CI=1.1-10.0,  $p=0.037$ ) had a higher risk for suicide attempts.

**Conclusion:** Mental wellbeing of both victims of bullying and bullies should be screened in primary health care as bullying behavior might be an early marker of risk of psychiatric disorders and suicidal behavior.

**TEMPERAMENT IN AXIS I PSYCHIATRIC DISORDERS – A META-ANALYSIS****Miettunen Jouko<sup>1</sup>, Raevuori Anu<sup>2-4</sup>**

<sup>1</sup>Department of Psychiatry, Oulu University and Oulu University Hospital, Finland; <sup>2</sup>Department of Public Health, University of Helsinki, Finland; <sup>3</sup>New York State Psychiatric Institute, Columbia University, United States; <sup>4</sup>Department of Adolescent Psychiatry, Helsinki University Hospital, Finland

**ABSTRACT**

**Objectives:** The aim of this study was to estimate differences between groups of Axis I psychiatric patients and controls in Cloninger's temperament dimensions using meta-analytic methods.

**Methods:** Studies were systematically collected using several literature databases (e.g. EMBASE, PsycINFO, PubMed, Web of Science). In addition, an extensive manual search was done. In all, nine psychiatric disorders with sixty-seven studies were included in meta-analyses. Two researchers cross-checked extracted data.

**Results:** Results are presented using pooled effect sizes (Cohen's d) based on random effect meta-analysis between cases and controls. Harm avoidance was statistically significantly higher in all diagnostic groups when compared to controls, the highest effect size were in social phobia (studies:  $n = 4$ ,  $d = 2.66$ ,  $p < 0.001$ ) and in major depression ( $n = 20$ ,  $d = 1.64$ ,  $p < 0.001$ ). Patients with anorexia nervosa and bulimia nervosa differed e.g. in novelty seeking ( $p < 0.001$ ), where individuals with anorexia nervosa had low scores ( $n = 8$ ,  $d = -0.35$ ) and those with bulimia nervosa the highest scores ( $n = 8$ ,  $d = 0.31$ ). Patient samples with bipolar disorder ( $n = 8$ ) differed from those with schizophrenia ( $n = 8$ ) by scoring lower in harm avoidance ( $d = 0.69$  vs.  $d = 1.22$ ,  $p = 0.04$ ).

**Conclusion:** This study was the first one to pool case-control studies on several psychiatric disorders in Cloninger's temperament dimensions. There were consistent differences between the disorders and the given data on differences should be taken into account in future studies using these instruments, for instance as suggestive endophenotypes for different psychiatric disorders.

**Contact information:** Jouko Miettunen, University of Oulu, Department of Psychiatry, P.O. Box 5000, 90014 OULUN YLIOPISTO, Finland, Tel. +358 8 3156923, Fax. +358 8 333167, email: jouko.miettunen@oulu.fi.

## EPIDEMIOLOGICAL STUDY OF PSYCHIATRIC DISORDERS IN THE MEDICAL SCIENCE STUDENTS

**Moghaddam Malek Mohammad Ghadimi, Tabatabaee Foozieh Hoseini**

Islamic Azad University of Torbat-e-Jam, Mashhad, Iran

### ABSTRACT

**Introduction:** The objectives of this research were to conduct an epidemiological study on psychiatric disorders in the medical science students.

**Methods:** The research method was descriptive. The statistical society consisted of the University students and the sample included 2062 (917 female and 1145 male) University students selected through stratified random sampling using SADS questionnaire. They were assessed and the Diagnosis of disorders was based on DSM-IV classification criteria.

**Results:** Prevalence of psychiatric disorders was at 21.54% among the University Students. The prevalence was 22.82% in females and 18.76% in males. Anxiety and mood disorders were the most prevalent psychiatric disorders with 8.34% and 7.52% respectively. The Prevalence of psychotic disorders was 1.41%; neuron-cognitive disorders were at 1.12% and dissociative disorders were at 0.68%. In the mood disorders, major depression had the highest rate of diagnosis (3.82%); in anxiety disorders, panic disorder had the highest rate (1.65%).

**Conclusion:** Psychiatric disorders are seen to be more prevalent in students using the drugs, students having unsuccessful marriage, deprived students, and fatherless/ motherless students than the other groups. These findings makes the duties of health-care planners and policy-makers more clear in developing practical and operation able programs in the field of mental health care. Maybe the reasons of higher prevalence of the mental disorders in between toward men are the restricted role of women in social activities, environmental stresses, difficulties in the family and married life, and also biological factors. Environmental stresses, urbanism and economic problems that are the reason of living in cities, may be the main reasons for higher prevalence of mental disorders in urban districts in comparison to rural ones.

**TOWARD THE CONTEXTUALIZATION OF THE RELATION BETWEEN THOUGHT-ACTION-FUSION (TAF) BELIEVES AND OBSESSIVE COMPULSIVE DISORDER: THE ROLE OF CULTURAL AND RELIGIOUS SYMBOLS**

**Noorian Zahra<sup>1</sup>, Rezaee Omid<sup>2</sup>, Dolatshahi Behrooz<sup>3</sup>**

<sup>1</sup>Azad University, Science and Research Unit, Tehran, Iran; <sup>2</sup>University of Social welfare and Rehabilitation Sciences; <sup>3</sup>University of Social welfare and Rehabilitation Sciences

**ABSTRACT**

**Objective:** Regarding the importance of obsessive compulsive disorders (OCD), the aim of this paper is to examine some of the roots of OCD with relation to the socio-cultural factors.

**Method:** By using the two dimensions of TAF, likelihood and moral, we conducted a survey research based on three groups: 1) OCD patients (39 samples), 2) patients with other anxiety disorders rather than OCD (19 samples) 3) and normal participants (30 samples) to allow us different comparisons between these three groups.

**Results:** Results show that there are positive correlation between TAF beliefs and the obsessive compulsive symptoms. Also, compared with normal participants, patients with OCD and patients that have other anxiety disorders had a higher level of TAF-likelihood-other belief. The occurrence of thought suppression was more or less equal in OCD and other anxiety patients, although it was higher compared with normal groups.

**Conclusions:** Most of previous researches found a higher level of TAF-likelihood than TAF-moral in OCD patients indicating that the interpretation thoughts about the likelihood of the occurrence of a negative event is a stronger mechanism than the engagement in the anxiety raised from immoral thoughts. However, the results of this study showed a contrary finding as in our samples, the mechanism of TAF-moral was stronger than TAF-likelihood. Explaining this finding, we got deeper to the cultural and religious beliefs of the targeted population and through qualitative interviews with some of the audiences we realized that there are a plenty of religious and cultural elements that foster the mechanism of TAF-morality.

**Contact information:** zahranoorian@gmail.com; dr.rezaer@uswr.ac.ir; dolatshahee@yahoo.com

## THE RELATION BETWEEN DURATION OF UNTREATED PSYCHOSIS (DUP), CLINICAL OUTCOME AND BRAIN MORPHOLOGY IN SCHIZOPHRENIA WITHIN THE NORTHERN FINLAND 1966 BIRTH COHORT

Penttilä Matti<sup>1</sup>, Haapea Marianne<sup>1,2</sup>, Veijola Juha<sup>1,3,4</sup>, Miettunen Jouko<sup>1</sup>, Tanskanen Päivikki<sup>2</sup>, Koponen Hannu<sup>5</sup>, Isohanni Matti<sup>1</sup>, Jääskeläinen Erika<sup>1</sup>

<sup>1</sup>Department of Psychiatry, University of Oulu, Finland; <sup>2</sup>Department of Diagnostic Radiology, Oulu University Hospital, Finland; <sup>3</sup>Institute of Health Sciences, University of Oulu, Finland; <sup>4</sup>Academy of Finland, Helsinki, Finland; <sup>5</sup>Department of Psychiatry, University of Kuopio, Finland

### ABSTRACT

**Objective:** Duration of untreated psychosis (DUP) has been reported to associate with poor outcome in schizophrenia. Some association has been found between DUP and brain morphology. DUP has still been studied with quite few other variables than outcome of illness. Our aim was to study DUP and its relation to outcome, brain morphology and medication in longitudinal, population-based sample of subjects suffering from schizophrenia.

**Methods:** Outcome was measured with PANSS, SOFAS, working ability, days in psychiatric hospitalisation and long-term medication. Subjects with schizophrenic psychosis (N=146) from the NFBC 1966 were invited to MRI scan of the brain conducted in 1999-2001. DUP was assessed from medical records and analysed as logarithmic transformation. MRI-data included total volumes of gray and white matter, intracranial cerebrospinal fluid (CSF), and regional gray matter volumes. We used Automated Anatomical Labeling (AAL) to define volumes. Full data was available for 48 subjects with DSM-III-R schizophrenia.

**Results:** Outcome measures did not correlate with DUP significantly. DUP did not correlate with total gray or white matter or cerebrospinal fluid (CSF). Long DUP correlated with reduced volumes of right central ( $p=0.046$ ) and right limbic ( $p=0.003$ ) area. In these areas postcentral gyrus ( $p=0.027$ ), superior temporal gyrus ( $p=0.024$ ) and hippocampus ( $p=0.003$ ) correlated with long DUP.

**Conclusion:** At least some brain abnormalities were associated with long DUP in schizophrenia. However, no association was found between DUP and outcome. Results from earlier patient studies of positive association between long DUP and poor clinical and social outcome, could not be replicated in our population based setting.

## A CROSS-CULTURAL STUDY OF THE PREVALENCE OF ANXIETY AND ITS CORRELATES AMONGST OLDER ADULTS IN DEVELOPING COUNTRIES

Prina A. Matthew<sup>1</sup>, Brayne Carol<sup>1</sup>, Prince Martin<sup>2</sup>

<sup>1</sup>Department of Public Health and Primary Care, Institute of Public Health, University of Cambridge, Cambridge, UK; <sup>2</sup>Centre for Public Mental Health, Health Service and Population Research Department, Institute of Psychiatry, King's College London, London, UK

### ABSTRACT

**Objectives:** We investigated the prevalence of anxiety amongst older adults in low and middle income countries with diverse cultures.

**Methods:** Cross-sectional surveys of all residents aged 65 or over (n= 15,021) in 11 catchment sites in 7 countries (China, India, Cuba, Dominican Republic, Venezuela, Mexico and Peru) were carried out as part of the 10/66 collaboration. Anxiety was measured by using the Geriatric Mental State Examination (GMS) and the AGE-CAT diagnostic system.

**Results:** The prevalence (age and sex standardised) of anxiety varied highly across sites, ranging from 0.1 % (95% CI: 0.1 – 0.3) in rural China to 9.6 % (6.2 – 13.1) in urban Peru. Urban centres had higher estimates of anxiety than their rural counterparts with adjusted (age, gender and site) odds ratios of 2.9 (95% CI: 1.7 - 5.3). Marital status, education, socio-economic status, number of physical impairments and having dementia were all associated with a GMS/AGE-CAT diagnosis of anxiety. The distribution of sub-threshold syndromes was also measured: rural China had the lowest prevalence of 3.8 % (95% CI: 2.1 – 5.5), whereas Dominican Republic had the highest with 49.1 % (46.5 – 51.7).

**Conclusions:** Anxiety is highly prevalent in Latin America. Estimates from this continent are higher than the ones from developed European countries found in the literature. Nevertheless the health budget allocated to mental health in developed countries is minimal. Further research will help in understanding why China has a low prevalence of anxiety, and if this is a socio-cultural, biological or study design related phenomenon.

**THE EFFECT OF PARENTING ON THE STABILITY OF SELF-ESTEEM IS LARGER AMONG ADOLESCENT GIRLS COMPARED TO BOYS**

**Raevuori Anu**

Department of Public Health, University of Helsinki, Finland; New York State Psychiatric Institute, Columbia University, United States; Department of Adolescent Psychiatry, Helsinki University Hospital, Finland

**ABSTRACT**

**Objectives:** Vast amount of research posits that parenting and family environment are crucially important for offspring self-esteem. Twin studies in turn suggest that genetic factors play an important role affecting the level and stability of self-esteem, and that the effects of shared environment are weaker. To address this potential discrepancy, the aim of this study was to determine the extent of residual genetic and environmental effects on self-esteem between the ages 14 y and 17 y in adolescence, controlling for the influences of parenting.

**Methods:** Nationally representative epidemiological sample of adolescent Finnish twins born 1983-87 (N~4000 twin individuals) were assessed by questionnaires. Parenting practices (Parental warmth, Autonomy, Relational tension, Monitoring, Parental strictness) were derived from adolescents' and parents' reports on the same five parenting dimensions at the year that the adolescents reached the age 12 y. Self-esteem was measured by Rosenberg global self-esteem scale in adolescents at 14 y and at 17 y. Data were analyzed using quantitative genetic methods for twin data.

**Results:** After allowing for the effects of parenting in boys, 2.9% of the residual variance in stability of self-esteem was attributable to additive genetic effects, 0% to shared environmental factors, and 8.2% to non-shared environmental influences. In girls, 0.7% of the residual variance in stability of self-esteem was attributable to additive genetic effects, 32.3% to shared environmental factors, and 9.7% to non-shared environmental influences. The total amount of self-esteem stability explained by parenting practices was 3.9% for boys and 17.1% for girls.

**Conclusion:** These results suggest that in adolescent girls, self-esteem is more sensitive for parenting, whereas in adolescent boys, parenting alone does not play as straightforward role in self-esteem stability as earlier suggested.

## MENTALLY ILL OFFENDING MALE OFTEN GETS SCHIZOPHRENIA DIAGNOSIS LATE AND NOT UNTIL IMPRISONED

Rautanen Mika<sup>1</sup>, Lauerma Hannu<sup>2,3</sup>

<sup>1</sup> University of Helsinki, Finland; <sup>2</sup> University of Turku, Finland; <sup>3</sup> Psychiatric Hospital for Prisoners, Turku, Finland

### ABSTRACT

**Introduction:** Serious crime can lead to a mental examination of the offender. Because of short sentences due to less significant crimes e.g. amercements and thefts, mentally ill people end up to imprisonment instead of psychiatric examination and care. A clinical notice has been that these patients suffer from serious both mental and socioeconomic problems and usually drift aside in the community, and the problems tend to worsen.

**Objectives:** The purpose was to describe and pay attention to the differences between non-forensic and forensic patients.

**Methods:** We extracted background patient information from all the schizophrenic male offenders in Finnish criminal justice system during years 2003 and 2006. Schizophrenic prisoners were found guilty and hence sentenced instead of assigning to a state hospital for treatment. The all-inclusive sample consisted of 83 men having been discharged from the Mental Hospital for Prisoners with the ICD-10 diagnosis of any form of schizophrenia (F20.x).

**Results:** We found that in 3 out of 4 cases schizophrenia was diagnosed in the prison hospital instead of community and circa 6 years later than on average in Finland.

**Conclusions:** The findings support presumptions of an under-recognised and ill-treated subgroup of men whose chronic psychotic illness is difficult to notice behind drug abusing, personality problems and offending behaviour. To shorten the diagnostic gap between forensic and non-forensic patients and to discriminate drug-related psychoses from chronic ones further studies concerning the reasons are needed.

## RELATIONSHIP OF PREGNANCY ANXIETY IN ITS DIFFERENT PERIODS AND SEXUAL SATISFACTION

**Tabatabaee Foozieh Hosseini, Moghaddam Malek Mohammad Ghadimi**

Islamic Azad University of Torbat-e-Jam, Mashhad, Iran

### ABSTRACT

**Objectives:** The aim of this research was to study the pregnancy anxiety in its different periods considering the related demographic factors.

**Method:** In a descriptive cross-sectional study, 384 pregnant women in the city of Mashhad, Iran were selected using convenience sampling. This sample was evaluated using Pregnancy Related Anxiety Questionnaire (PRAQ), Golombok-Rust Inventory of Marital Status (GRIMS), and Demographic Information Questionnaire. The gathered data were analyzed using descriptive statistics, univariate analysis of variance, Pearson correlation coefficient, t-test, and stepwise regression analysis.

**Results:** The rate of pregnancy anxiety was high in the first and third trimester and low in the second trimester. Stepwise regression of analysis showed that pregnancy anxiety has a relation with sexual satisfaction ( $P < 0.001$ ), age ( $P < 0.001$ ), and education ( $P < 0.001$ ). Having unsuccessful pregnancy increases the pregnancy anxiety rate.

**Conclusion:** Planning preventive and supportive programs for pregnant women is necessary.

**Key words:** anxiety, pregnancy, sexual satisfaction

**Contact information:** Foozieh Hosseini Tabatabaee e-mail: fhtabatabaie@yahoo.com. Malek Mohammad Ghadimi Moghaddam e-mail: ghadimi\_743@yahoo.com.

**PREDICTING PSYCHIATRIC HOSPITAL CARE AMONG ADOLESCENT OUTPATIENTS WITH THE PRODROMAL QUESTIONNAIRE**

**Therman Sebastian, Manninen Marko, Lindgren Maija**

National Institute for Health and Welfare, Helsinki, Finland

**ABSTRACT**

Psychotic disorders usually develop gradually, and initial outpatient care is an excellent opportunity for detecting such a disease course. In order to facilitate the early detection of psychoses, several specific instruments have been constructed for the screening of prepsychotic disorders. These instruments, such as the Prodromal Questionnaire (PQ), have been validated against gold-standard interview methods, but research on prospective predictive value is still scant.

We administered the PQ to 1100 first-admission adolescent psychiatric patients in two consecutive cohorts. The 92-item PQ is a forced-choice questionnaire which is designed to cover extensively all the main aspects of prepsychotic problems, including positive, negative, disorganized, and general symptoms. Psychiatric hospital admissions were followed for 1-6 years in the Finnish National Hospital Discharge Register.

Our predictors are the four main symptom dimensions of the Prodromal Questionnaire, as well as their interactions. Using a Cox proportional hazards model, we estimate their impact on both psychiatric hospitalization risk and specific risk for hospitalization with a psychotic disorder.

**Contact information:** Sebastian Therman e-mail: [sebastian.therman\(at\)thl.fi](mailto:sebastian.therman(at)thl.fi)

## A CLASSICAL MODEL OF ALCOHOL USE: EFFICIENCY OF GLUCOSE HOMEOSTASIS AND COGNITIVE FUNCTIONS OF MODERATE ALCOHOL USERS AND ABSTAINERS

**Welcome Menizibeya Osain, Pereverzev Vladimir Alekseevich**

Belarusian State Medical University, Minsk, Belarus

### ABSTRACT

**Objectives:** Alcohol use even in moderate doses might be detrimental under certain conditions. We therefore examined the efficiency of glucose homeostasis and cognitive functions of moderate alcohol users and abstainers.

**Methods:** Male volunteers – 4<sup>th</sup> year medical students (8 moderate alcohol users who never drank alcohol for at least 7 days before the study and 5 abstainers users were used as the control group) were involved in this present study, which took 6 hrs on fasting. The AUDIT, CAGE, MAST and STAI questionnaires, tests followed by questions, tests on visual, auditory, operative short term memory and attention were used as a measure; performance rate on various tasks were estimated. Blood glucose concentration (BGC) was measured at 2 hrs interval. The t-test was employed for analysis of results. The probability value for significance was set at  $p < 0.05$ .

**Results:** The moderate alcohol users reported alcohol use in doses of 23ml pure ethanol / session and 1-2 times / month. Abstainers had increased BGC in all stages of the experiment ( $p < 0.001$ ). Alcohol users had increase in BGC within the first two hours and a significant fall in the 4-6 hrs ( $p < 0.05$ ), and was accompanied by a significant decrease in mental work productivity. Among alcohol users, total error committed on various tests was higher by 13–40 times ( $p < 0.001$ ) and increased with decrease in BGC ( $r = -0.83$ ;  $p < 0.01$ ).

**Conclusion:** Moderate alcohol use (even after 7-10 days) results in glucose homeostasis disorder, subsequently leading to decrease in metal productivity coefficient, especially under 4-6 hrs intensive mental activities.

**LONG-TERM STABILITY OF MMPI MEASURES IN ADOPTEES WITH HIGH GENETIC RISK FOR SCHIZOPHRENIA AND THEIR CONTROLS**

**Siira Virva, Wahlberg Karl-Erik, Hakko Helinä**  
Department of Psychiatry, University of Oulu, Finland

**ABSTRACT**

**Background:** Vulnerability is a well studied factor that is associated with the development of schizophrenia. An emerging trend in the field of the recent research has underlined the importance of enduring nature of potential vulnerability factors. Temporal stability refers to state independence and test-retest stability of psychometrically measurable variables. Studies have found that psychometric deviance assessed on the Minnesota Multiphasic Personality Inventory (MMPI) may be an indicator of vulnerability to schizophrenia.

**Objective:** To evaluate the long-term stability of MMPI scores for 14 schizophrenia related scales among the adoptees in a prospective longitudinal high-risk study.

**Methods:** The sample consisted of all adoptees who were assessed by the MMPI at the initial phase and after a mean interval of 11 years at the follow-up in the Finnish Adoptive Family Study of Schizophrenia (n = 74). The stability in MMPI scores was studied by using analysis of paired-samples t test and the effect of gender, psychiatric disorder at the follow-up, genetic risk and their interactions in pairs was studied in the analysis of covariance.

**Results:** The initial MMPI scores predicted the MMPI scores at the follow-up statistically significantly. Gender, follow-up psychiatric status and their interaction but not genetic risk associated with majority of the MMPI scales at follow-up.

**Conclusion:** MMPI measured personality traits that may be associated to the vulnerability of schizophrenia seem to be stable over time.

**Contact information:** [virva.siira@oulu.fi](mailto:virva.siira@oulu.fi)

# **GENERAL INFORMATION FOR PARTICIPANTS**

**Conference fee** includes participation to all lectures and poster presentations; abstract book; lunch and coffee; conference dinner; and bus transportation.

**Conference venue: Auditorium 101A, Medical Faculty, University of Oulu, Aapistie 5A, Oulu.**

The conference venue is about 3 kilometres east from the city centre. The conference venue is the main building of the medical faculty of University of Oulu. There is a cafeteria (opening hours: Thursday 08.00-15.30, Friday 08.00-14.30) in the venue. Free wireless internet (PanOULU) is available in the building. The venue is next to the University Hospital of Oulu. The nearest cash dispenser is located inside the hospital.

**Registration and information desk**

Registration and information desk is in the conference venue, outside the Auditorium 101A. The desk is open 8.00-16.00 on Thursday the 26th, and 8.45-16.15 on Friday the 27th.

**Conference dinner**

The conference fee includes a cocktail dinner held in Hotel Lasaretti (address: Kasarmintie 13) on Thursday evening (18.00-22.00). Registration in advance is required. The dinner is sponsored by Oy Bristol-Myers Squibb (Finland) Ab.

**Poster session and presentations**

Poster sessions will be at lunch time on both days; on Thursday between 11.30-12.30 and on Friday between 11.45-12.45. Posters will be present during the both days. The presenting author will be invited to give a short oral overview of the poster's content during one of the two poster sessions. At least one of the authors should be present at their poster at designated sessions. Posters will be vertical (maximum size: width 100 cm x height 140 cm). The organising committee offers a small award to the best poster of the conference.

**Organisers**

Oulu Psychiatric Epidemiology Society ([www.opes.fi/home](http://www.opes.fi/home))

Graduate School of Psychiatry ([www.psykiatriantutkijakoulu.fi](http://www.psykiatriantutkijakoulu.fi) [in Finnish])

Department of Psychiatry, Oulu University Hospital ([www.ppshp.fi/psykiatria](http://www.ppshp.fi/psykiatria) [in Finnish])

Department of Psychiatry, University of Oulu ([www.medicine oulu.fi/psyk/sivut/homepage.htm](http://www.medicine oulu.fi/psyk/sivut/homepage.htm))

**Organising committee**

Jouko Miettunen, PhD; Erika Jääskeläinen, MD, PhD; Marianne Haapea, MSc; Antti Alaräsänen, MD; Juha Veijola, MD, PhD; Anu Luukkonen, BMed; Jenni Koivukangas, BMed; and Jani Moilanen, BMed.

**Organising committee contact information**

Erika Jääskeläinen, secretary of the OPES

Telephone: +358 40 4702792, Email: [opes@opes.fi](mailto:opes@opes.fi)

**Acknowledgements**

The conference has been supported by the Federation of Finnish Learned Societies, Finnish Medical Association, Oy Bristol-Myers Squibb (Finland) Ab, AstraZeneca Oy, Oy H. Lundbeck Ab, and Servier Finland.

### **Transportation to and from airport**

The distance from the Oulu airport to the city centre is about 15 kilometres. The Oulu train station is located in the city centre. There is an airport bus (bus #19) from the airport to Oulu city centre and from Oulu city centre to the airport. The timetable of the bus can be found from [www.koskilynjat.fi/aikataulut](http://www.koskilynjat.fi/aikataulut). The price for one way ticket from airport to city centre is appr. 5 Euros. The taxi drive from/to the airport costs appr. 40 Euros. There is taxi stop outside the airport and taxi can be also ordered by phone: +358 600 30081 (from Finnish mobile phone 0600 30081).

### **Transportation inside Oulu**

#### Conference bus

There is free bus transportation for the participants of the conference. The bus leaves city centre (in front of City Hall, please see map) at 8.10 and Hotel Lasaretti at 8.20 on Thursday 26<sup>th</sup>. The return transportation on Thursday leaves Conference venue at approximately 15.30. On Friday 27<sup>th</sup> the bus leaves Hotel Scandic at 8.40, city centre (City Hall) at 8.50, and Hotel Lasaretti at 9.00. There is no free bus transportation on Friday afternoon.

Taxi: The number of taxi of Oulu is +358 600 30081 (from Finnish mobile phone 0600 30081).

Public bus: One way bus ticket costs 2.90 Euros. The timetables of bus can be found from [www.koskilynjat.fi/aikataulut](http://www.koskilynjat.fi/aikataulut), and are also available in the information desk at the conference venue.

### **Information about Oulu**

<http://www.oulu.com/>

<http://www.oulutourism.fi/en>

The weather in Oulu during the conference is likely to be quite dark and also quite cold, between appr. -10 and +5 degrees Celsius. The currency of Finland is Euro. The time zone is GMT+2.

### **Shopping in Oulu**

The city centre's shopping streets are Kirkkokatu (pedestrian street, called Rotuaari, see the hotel map), Isokatu, Uusikatu, Kauppurienkatu, Pakkahuoneenkatu and Hallituskatu. When you find the pedestrian street Rotuaari, you'll also find the Market Hall and Market Square. You can get to the Market Hall and Market Square easily from the Rotuaari by walking along the Kauppurienkatu.