European Psychiatry 28 (2013) 302–307

Available online at
SciVerse ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en

Original article

Lifetime and 12-month prevalence rates of sub-clinical psychosis symptoms in a community cohort of 50-year-old individuals

W. Rössler [a,b,*], M.P. Hengartner [a], V. Ajdacic-Gross [a], H. Haker [a], J. Angst [a]

[a] Department of General and Social Psychiatry, Psychiatric University Hospital, University of Zurich, Militärstrasse 8, 8004 Zurich, Switzerland
[b] Collegium Helveticum, A Joint Research Institute between the University of Zurich and the Swiss Federal Institute of Technology, Zurich, Switzerland

ARTICLE INFO

Article history:
Received 27 January 2012
Received in revised form 24 April 2012
Accepted 11 May 2012
Available online 15 September 2012

Keywords:
Epidemiology
Prevalence rates
Sub-clinical psychosis
Schizotypy
Ego disorder
Hallucination

ABSTRACT

Background: Estimation of prevalence rates of sub-clinical psychosis symptoms can vary considerably depending on the methodology used. Furthermore, discussions are ongoing how prevalence rates may differ across various syndromes.
Method: We analyzed data from the prospective Zurich Study, assessing sub-clinical psychosis with a semi-structured clinical interview in a community cohort of 50 years old individuals. The higher-order factors of psychosis symptoms were analyzed with confirmatory factor analysis to validate the a priori specified symptom-structure. Further associations were examined with contingency tables and logistic regressions.
Results: The confirmatory factor analysis was consistent with a structure with four higher-order syndromes. Those different syndromes were labeled "thought disorder" (lifetime prevalence = 10.6%), "ego disorder" (4.8%), "hallucination" (9.7%), and "schizotypy" (28.2%). A strong discrepancy was noted between the 12-month prevalence of any symptoms and those considered to be severe. Twelve-month prevalence rates of distressful syndromes ranged from 0.1% for hallucinations up to 6.6% for schizotypy. The most strongly interrelated syndromes were thought disorder and ego disorder (OR = 12.4).
Conclusion: Our findings indicate a continuity of sub-clinical psychosis within the general population even though only a small proportion suffers from distressing symptoms. Our analyses showed that the syndromes identified here are similar to those found in full-blown schizophrenia, albeit in an attenuated form.

1. Introduction

The epidemiology of schizophrenia has been widely reviewed [23,15,26]. Although significant variability exists between incidence and prevalence rates, the average annual incidence is about 0.2 per 1000 persons, with a lifetime prevalence of 0.4–0.7%.

Recent research has suggested that the psychosis phenotype also might be expressed at sub-clinical levels [13,20]. This phenotype is commonly referred to as psychotic-(like) experiences, proneness to psychosis, at-risk mental state, or schizotypy. A systematic review of 47 reported incidence and prevalence studies of population rates for sub-clinical psychosis symptoms has revealed a median prevalence rate of around 5% and a median incidence rate of around 3%, albeit with significant variation in those rates [28].

Part of this variation can be attributed to the assessment tools applied, i.e., whether an evaluation is based on self-reports, lay interviews, or professional clinical interviews. One assumes that the rate of false-positive answers is reduced by using professional clinical interviews or professional observer ratings rather than relying upon lay interviews or self-reports. In addition, considerable variation can be found in the instruments used in those surveys, e.g., the Perceptual Aberration and the Magical Ideation Scale [6], the Psychosis Screening Questionnaire [3], the psychosis subscales from the SCL-90-R [20], the Community Assessment of Psychic Experiences [29], or the CIDI [14]. Even if publications concerning sub-clinical psychosis give the impression of a consistent or unitary concept of sub-clinical psychosis, in truth those listings and the number of items associated with each instrument mostly characterize the substance of those concepts. Thus, no comprehensive picture can describe what constitutes sub-clinical psychosis.

The topic of sub-clinical psychosis has gained increased interest in the context of early identification and treatment for persons at risk for psychosis. Schultze-Lutter et al. [24] have stated a "near Babylonian speech confusion" within this field and have

* Corresponding author. Department of General and Social Psychiatry, Psychiatric University Hospital, University of Zurich, Militärstrasse 8, 8004 Zurich, Switzerland. Tel.: +41 44 296 7400; fax: +41 44 296 7409.
E-mail address: roessler@dgsp.uzh.ch (W. Rössler).

0924-9338/$ – see front matter © 2012 Elsevier Masson SAS. All rights reserved.
http://dx.doi.org/10.1016/j.eurpsy.2012.05.001

complained that this at-risk nomenclature lacks clarity with the emergence of ever-new terms and concepts. Therefore, to reduce the clinical heterogeneity seen in sub-clinical psychosis it would be useful to define more general psychopathological categories, preferably in an at-risk population between 20 and 50 years of age. This seems equally important in sub-clinical psychosis research, as evidenced by a new diagnostic entity called "Attenuated Psychosis Syndrome" that might be included in the upcoming DSM-5 [5]. Such a diagnosis will significantly promote the identification and treatment of such persons with sub-clinical psychosis [5].

Thus, in the current study our aims were: to determine the lifetime and 12-month prevalence rates of newly described psychosis syndromes in our cohort of 50-year-old individuals, to investigate the association between severity of symptoms and the prevalence of those distressful syndromes, and to assess the co-occurrence of those new syndromes.

2. Materials and methods

2.1. Sampling

The sampling method for the Zurich Study was based on a two-phase procedure. Fairly common in epidemiological research, it is characterized by both screening and interviews [9]. The latter is carried out with a sub-sample of initially screened subjects, and is typically stratified along selected criteria and cut-offs. In statistical analysis, those stratified data must be weighted to receive correct point estimates, such as prevalence rates.

In 1978 we sampled 4547 subjects (2201 males, 19 years old; 2346 females, 20 years old) who were considered representative of the canton of Zurich in Switzerland. Male and female participants were sampled with different approaches. In Switzerland, every male person must undertake a military screening test at the age of 19. Therefore, conscripts within a defined catchment area comprise its respective, complete male age group. With the consent of military authorities, but independent of their screening procedure, we randomly screened 50% of all male conscripts of this age group. The refusal rate was 0.3%. Female participants were identified from the complete electoral register. Again, 50% of them were randomly selected and received questionnaires by mail; 75% responded. All participants received a demographic questionnaire and the Symptom-Checklist 90-Revised (SCL-90-R) [7]. The latter is a comprehensive self-report questionnaire of 90 items that cover a broad range of psychiatric symptoms.

For the second phase, we applied a stratification procedure to enrich the interview sample, incorporating cases at risk for the development of psychiatric syndromes. Stratification was based on a cut-off value of the SCL-90-R global severity index (GSI), which was obtained during our initial screening phase. That is, two-thirds of the final interview sample comprised randomly drawn high scorers (defined by the 85th percentile or above on SCL-90-R GSI scores) from the screening-sample while the remaining third were randomly selected from the rest of the screening-sample (GSI scores below the 85th percentile). In all, 591 subjects (292 males, 299 females) were chosen from this process for the first interview in 1979. The interviewers were experienced and extensively trained clinical psychologists. Follow-up interviews were conducted in 1981, 1986, 1988, 1993, 1999, and 2008. Over that span, 57% of the original cohort continued to participate. More details are provided in Fig. 1. As a result of the stratification, the weighted interview sample in 2008 represented 1499 persons of the general population. Thereby we were able to estimate prevalence rates representative of the general population. The initial allocation to the two groups split through the cut-off of the 85th percentile of the GSI did not change over time, although drop-outs were rather extremely high or low scorers on the GSI [10]. A detailed account of the sampling procedure has been provided elsewhere [1,21].

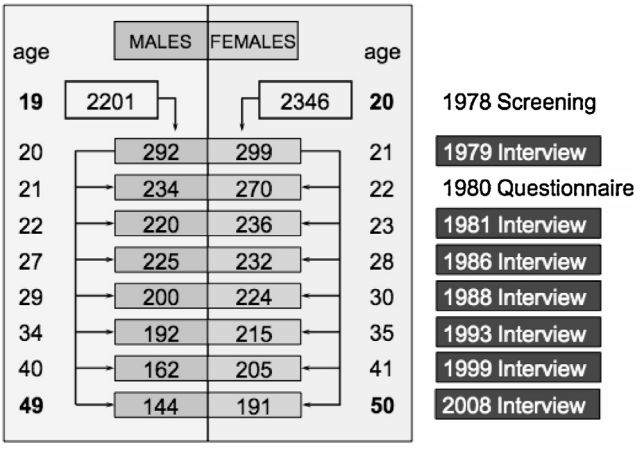

Fig. 1. Number and age of participants in the Zurich Cohort Study.

2.2. Instruments and measures

Interviews were conducted with the "Structured Psychopathological Interview and Rating of the Social Consequences of Psychological Disturbances for Epidemiology" (SPIKE) [1]. This semi-structured interview, developed for epidemiological surveys in psychiatric research, assesses data about sociodemography, somatic syndromes, psychopathology, substance use, medication, health services, impairment, and social activity. Its reliability and validity have been reported previously [16].

In the 2008 interview we introduced a new section about psychotic symptoms. The objective of this expansion of the SPIKE was to assess a broad range of such symptoms in the general population, including sub-threshold psychosis. The section comprised four screening questions representing four syndromes. If a screening question was positively endorsed, it was followed by a series of detailed and more specific questions about the pertinent symptoms. Negative symptoms were not included in the psychosis section of the SPIKE because it is very difficult to differentiate reliably between negative and depressive symptoms in a clinical interview that covers a broad range of symptoms. A detailed listing of the included syndromes and the corresponding symptoms is provided in Table 1.

Interviewee's description of psychotic symptoms was carefully explored and clinically validated. In case of incertitude or ambiguity the interviewers were advised to enquire the symptoms/episodes in detail. Therefore the interviewers were previously trained in evaluation and assessment of psychotic symptoms. Pretest interviews were conducted at the Psychiatric University Hospital of Zurich with schizophrenic patients. The interviewers coded with "yes" or "no" whether the participant ever experienced over the lifespan any given symptom. If an item was endorsed, it was followed by a question about whether that particular symptom had also occurred during the last 12 months. Thus we were able to assess lifetime and 12-month prevalence rates for every symptom. If a respondent endorsed at least one symptom of a given syndrome, then the latter was defined as being present. Consequently, a syndrome was defined as being absent, if none of the corresponding symptoms had been endorsed. Respondents were additionally asked to indicate the distress attributed to the respective syndrome on a scale ranging from 0 "no distress at all" to 100 "extremely high distress". Those with distress values greater or equal to 50 were regarded as severe