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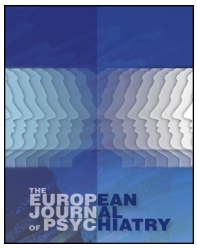

ORIGINAL ARTICLE

A cross-sectional survey of psychotic symptoms in the community: The GRANAD∑P psychosis study

M. Guerrero-Jiménez[a], B. Gutiérrez[b], I. Ruiz[c,d], M. Rodríguez-Barranco[c,d,e], I. Ibanez-Casas[b], M. Perez-Garcia[f], E. Valmisa[g], J. Carmona[h], J.E. Muñoz-Negro[a,b], J.A. Cervilla[a,b,*]

[a] *Mental Health Unit, San Cecilio University Hospital, Granada, Spain*
[b] *Department of Psychiatry, Faculty of Medicine, University of Granada, Spain*
[c] *CIBERESP Centro de Investigación Biomédica en Red Epidemiología y Salud Pública, Spain*
[d] *Andalusian School of Public Health, Granada, Spain*
[e] *Instituto de Investigación Biosanitaria ibs.GRANADA, Hospitales Universitarios de Granada/Universidad de Granada, Granada, Spain*
[f] *Faculty of Psychology, University of Granada, Spain*
[g] *Mental Health Unit, Puerto Real Hospital, Cádiz, Spain*
[h] *PISMA, Plan Integral de Salud Mental de Andalucía, Sevilla, Spain*

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Abstract
Background and objectives: Psychotic symptoms (PS) can be ascertained in the general population suggesting the existence of a wide psychosis phenotype. We aim to investigate the prevalence and correlates of PS in the province of Granada (Spain) in the absence of previous data. Our objectives were to establish the prevalence of PS, i.e. delusions and hallucinations, and identifying correlates with PS in search of plausible risk factors.
Methods: This is a cross-sectional study (GRANAD∑P study) including assessments of 809 individuals who were selected randomly from the Unified Database of the Andalusian Health System, a census covering about 98% of the entire regional population. PS were assessed by the MINI Neuropsychiatric International Interview Psychosis Subscale. A variety of potential risk factors for PS were also assessed including socio-demographics, cognitive function, psychiatric comorbidity and physical health issues.
Results: The prevalence of any PS in the province of Granada was 10.3% (hallucinations were detected in 6.1% of the sample and delusions in 7.4%). PS was correlated with increased suicide risk, lower functionality, having suffered childhood abuse, cannabis use, lower working memory and higher impulsivity.

* Corresponding author.
E-mail address: jcervilla@ugr.es (J.A. Cervilla).

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Conclusions: The prevalence of PS in this Southern Spanish sample is similar to that found in other European populations. This may indicate that an extended subclinical psychotic phenotype can be detectable on general populations and that it associates to a variety of cognitive deficits, personality traits and environmental factors upon which we can direct preventative measures to prevent transition from subclinical non-cases to clinical cases states.

Introduction

Delusional and hallucinatory experiences have historically been defined as psychotic symptoms (PS). PS have been traditionally used clinically as a turning point for a diagnosis of psychotic disorder. However, a large body of literature shows now that PS can be ascertained in the general population among people who do not fulfil clinical criteria for psychotic disorder,[1] thus suggesting a broader concept of a ''wide psychosis phenotype''.[2,3] Such notion has been supported by epidemiological, genetic, neuroimaging and clinical investigation findings.[4] Hence, a kind of gradient would exist were healthy individuals without any psychotic experience would be situated at one end and those with a clinical psychosis would be at the other, being the latter ''the visible tip of the iceberg''.[4] Indeed, section II of DSM-V assumes this concept in some of its descriptions of psychosis.[5] Few instruments have been validated to evaluate PS in community samples but the most commonly used instrument so far has been the Composited International Diagnosis Interview (CIDI) (PS section). Other studies have also used the Mini International Neuropsychiatric Interview that also contains its own PS section.[6,7]

Prevalence of psychotic symptoms in the general population

The occurrence of PS is not uncommon in non-clinical community samples. Thus, a recent meta-analysis suggests that PS in population based studies are about ten times higher than the prevalence of diagnosed psychotic disorders,[8] estimating a median prevalence of 7.2% (4.9% hallucinations, 6.0% delusions). Among the most important studies included are the Dutch NEMESIS-I study[2] reporting a prevalence of PS of 17.5% (8.2% for hallucinations and 12.2% for delusions), and the NEMESIS-II study reporting that 16% of participants exhibit some PS.[9] Conversely, the British National Comorbidity Survey reported in 2004 a 5.5% PS prevalence in a British sample of 8850 individuals as measured with the Psychosis Screening Questionnaire (PSQ) (4.2% reported hallucinations and 9.1% delusions).[10] In the United States, the National Comorbidity Survey reported 11.6% as PS prevalence (10.7% hallucinations, 2.2% delusions) in a sample of 5877 individuals using an expanded version of the CIDI.[11] In addition, another cross-sectional study including 52 countries worldwide taking part in the World Health Organization's World Health Survey, reported more recently that the prevalence of having at least one PS ranged from 0.8% to 31.4%[12] among participating countries. Other relevant recent studies have been the Singapore Mental Health Study (SMHS)[13] reporting a 3.8% of PS (4.3% hallucinations, 1.1% delusions), and similar studies in Tanzania,[14] South Africa[15] or Spain (Catalonia)[16] showing prevalences of 3.9%, 12.7% and a 11.2%, respectively (Table 1).

Factors associated with of psychotic symptoms

Among social factors associated with PS by previous epidemiological studies are younger age, ethnic minorities, migrant status, lower pay, poorer education, unemployment, not being married, alcohol and cannabis abuse, experience of stressful events, urban upbringing and family history of mental.[8,12] On the other hand, recent studies pose an ''affective pathway'' to early psychosis mediated by two synergistic potential risk factors: childhood trauma and ''social defeat''.[17] Additionally, higher risk for PS have been reported in sexual minority groups,[18] bullying victims,[19,20] advanced paternal (but not maternal) age at birth,[21] Latino race-ethnicity[22] and lower cognitive speed processing.[23] Finally, many recent studies have focused on clarifying the neurodevelopmental factors associated with the expression of a continuum psychotic phenotype[24–26] lending some support to the notion of a psychotic dimension in the general population.

The aims of this study are to investigate the prevalence and correlates of PS (delusions and/or hallucinations) in a representative community sample living in the province of Granada (Southern Spain) and to identify a multivariate explanatory model of potential risk correlates for PS.

Methods

Design and sampling method

The GRANADΣP study is a cross sectional survey of general population in the province of Granada (Spain). A more detailed description of its methodology is described elsewhere.[27] The study protocol was approved by the Granada University Hospitals Research Ethics Committee. Sampling was performed in a two-stage cluster sampling with stratification of the primary sampling units (PSUs) depending on whether they were rural or urban. To be able to estimate a 2% mental disorder prevalence, with ±0.8% accuracy at a 95% confidence interval, the target sample was

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