Journal of Affective Disorders 222 (2017) 211–217

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research paper

Psychotic-like experiences and happiness in the English general population

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ARTICLE INFO

Keywords:
Psychotic-like experience
Happiness
Depression
Anxiety

ABSTRACT

Background: Psychotic-like experiences (PLEs) have been associated with a variety of adverse outcomes but how they affect happiness in individuals with PLE is unknown. Thus, the aim of the study was to assess the association between PLEs and happiness, and the factors that may influence this association.

Methods: Nationally representative data from the 2007 Adult Psychiatric Morbidity Survey including adults aged ≥ 16 years was analyzed. The Psychosis Screening Questionnaire was used to assess past 12-month PLE. Individuals who endorsed at least one of the following were considered to have any PLE: thought control, paranoia, strange experiences, auditory hallucinations. Happiness (3-point scale) was assessed with a validated question with higher scores indicating lower levels of happiness. The association between PLE and happiness was assessed by multivariable ordinal logistic regression. Mediation analysis was also performed.

Results: Among the 7363 individuals included in the analysis, the prevalence of any PLE increased with decreasing levels of happiness [very happy (2.3%), fairly happy (5.4%), not too happy (14.9%)]. This was also shown in the multivariable analysis adjusted for sociodemographic factors and stressful life events (from very happy to not too happy: OR = 2.41; 95%CI = 1.86–3.12). Mediation analysis showed that anxiety disorders explained the largest proportion of the association (38.8%) followed by depressive episode (28.5%), insomnia (21.9%), disability (16.5%), pain (12.5%), social support (10.0%), and physical health conditions (6.0%).

Limitations: The cross-sectional design limits causal inference.

Conclusion: Interventions to identify and address conditions that may have a negative impact on happiness in individuals with PLE may be important to improve their well-being.

1. Introduction

Psychotic-like experiences (PLEs) are attenuated forms of psychotic symptoms (e.g., delusions and hallucinations), which do not reach the clinical threshold for a psychosis diagnosis in terms of intensity, persistence, associated distress, and treatment need. PLEs are often considered as part of extended phenotypes of psychotic disorders which may exist on a continuum of severity with its extreme end consisting of diagnosable psychotic disorders such as schizophrenia (van Os et al., 2009). However, it is also known that only a minority of PLE cases progress to full-fledged psychosis (Werbeloff et al., 2012). A recent systematic review showed that PLEs are highly prevalent in the general population with its pooled prevalence being 7.2% (Linscott and van Os, 2013) – a figure about 10 times higher than that of schizophrenia (Saha et al., 2005).

There is burgeoning evidence base that PLEs in adulthood are associated with a multitude of adverse health outcomes such as suicidal behavior (DeVylder et al., 2015; Koyanagi et al., 2015b), physical diseases (Moreno et al., 2013; Oh and DeVylder, 2015; Saha et al., 2011a), common mental disorders such as depression and anxiety (Koyanagi et al., 2016a; McGrath et al., 2016; Saha et al., 2012a), pain (Koyanagi and Stickley, 2015a; Koyanagi et al., 2016b), sleep problems (Koyanagi and Stickley, 2015b; Oh et al., 2016; Reeve et al., 2015), disability (Navarro-Mateu et al., 2017) and other factors such as lack of social support (Saha et al., 2012b). Many of these factors are known to impact negatively on subjective well-being (Haller and Hadler, 2006; Jorm and Duncan-Jones, 1990; Lambert D'raven et al., 2015; Liu et al., 2016; Lucas, 2007; Muller et al., 2015; Ong et al., 2016). However, to date, there are no studies on the association between PLEs and happiness or other related measures of well-being (e.g., positive affect, positive mood, life satisfaction, quality of life). Happiness and subjective well-being reflect positive levels of mental health and are people's evaluation regarding the quality of their lives, and are commonly used measures to assess how people feel about their state of psychological well-being and overall life satisfaction (Keyes, 2014). According to Keyes's (2002) two continua model, mental health and mental illness

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http://dx.doi.org/10.1016/j.jad.2017.07.013
Received 17 May 2017; Received in revised form 29 June 2017; Accepted 6 July 2017
Available online 08 July 2017

are separate but correlated axes with one representing the presence or absence of mental health, and the other, presence or absence of mental illness.

Given that happiness is considered to be a fundamental human goal (United Nations), it is crucial to assess this association and the factors that may be affecting the level of happiness in individuals with PLE to improve the well-being of this vulnerable group. Thus, the aim of the current study was to assess the association between PLE and happiness in community-dwelling adults, and to examine the factors that may influence this association. It was hypothesized that individuals with PLE have lower levels of happiness and that the above-mentioned factors may be important in this association.

2. Methods

2.1. The survey

Secondary data analysis of the 2007 Adult Psychiatric Morbidity Survey (APMS) was conducted (n = 7403). Details of this survey have been provided elsewhere (Jenkins et al., 2009; McManus et al., 2009). Briefly, this survey was conducted between October 2006 and December 2007 by the National Center for Social Research, in collaboration with the University of Leicester. In order to obtain a nationally representative sample, a multistage stratified probability sampling design was used. The target population was adults (aged ≥ 16 years) living in private households in England. The sampling frame was the small user postcode address file and the primary sampling units were postcode sectors. Stratification by region and by manual and non-manual socioeconomic groupings was conducted. If there was more than one adult in a household, one individual was randomly selected by the Kish grid method (Kish, 1949). Information was obtained from respondents by computer-assisted personal interviewing (CAPI). The response rate was 57%. Sampling weights were created to represent the English population by taking account of non-response and the probability of selection. Ethical approval for the survey was obtained from the Royal Free Hospital and Medical School Research Ethics Committee. All participants provided informed consent.

2.2. Variables

2.2.1. Happiness (outcome variable)

Happiness was assessed with a cross-culturally validated question 'taking all things together, how would you say you were these days?' with answer options 'very happy (coded 0)', 'fairly happy (coded 1)', or 'not too happy (coded 2)' (Gallup, 1976). A previous study using the same dataset has shown that this question is strongly correlated with other measures related to hedonic well-being (calm and peaceful, lots of energy, full of life) suggesting good convergent validity of this single-item scale (Ali et al., 2013).

2.2.2. Psychotic symptoms (exposure variable)

The Psychosis Screening Questionnaire (PSQ), which consists of sections on hypomania, thought control, paranoia, strange experiences, and hallucinations, was used to assess PLEs in the past 12 months (Bebbington and Nayani, 1995). Information on hypomania was not used given the focus on psychosis. Symptom severity was determined by one or two follow-up questions after the main probe question. As in a previous publication using the same dataset, the strictest criteria was used to define the presence or absence of psychotic symptoms in an attempt to capture truly anomalous experiences (Boyda and McFeeters, 2015). The questions used in the PSQ can be found in Table 1. The PSQ has been shown to have a sensitivity and specificity of 96.9% and 95.3%, respectively, in identifying individuals with psychosis (Bebbington and Nayani, 1995). Any PLE referred to the endorsement of at least one of the four types of PLEs.

2.2.3. Depressive episode, anxiety disorder, insomnia, pain, physical heath conditions, disability and social support (mediating variables)

The interviewers administered the Clinical Interview Schedule Revised (CIS-R). This can be administered by lay interviewers, and was used to generate ICD-10 diagnoses of depressive episode and anxiety disorder (generalized anxiety disorder, panic disorder, phobia, obsessive-compulsive disorder) in the prior week (Lewis et al., 1992). The reliability and validity of the CIS-R have been reported in previous publications (Jordanova et al., 2004; Lewis et al., 1992). Insomnia was defined as fulfilling all the following three criteria: (i) problems trying to get to sleep or getting back to sleep (if had woken up) in the past month; and in the past seven days, (ii) had problems with sleep on at least four nights in addition to (iii) taking at least one hour trying to get to sleep on the night with least sleep (Freeman et al., 2010). The question on pain was "During the past four weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?", which was taken from the SF-12 questionnaire (Ware et al., 1996). The answer options were 'not at all' (scored = 1), 'a little bit' (scored = 2), 'moderately' (scored = 3), 'quite a bit' (scored = 4), and 'extremely' (scored = 5).

The total number of 20 physical health conditions (cancer, diabetes, epilepsy, migraine, cataracts/eyesight problems, ear/hearing problems, stroke, heart attack/angina, high blood pressure, bronchitis/emphysema, asthma, allergies, stomach ulcer or other digestive problems, liver problems, bowel/colon problems, bladder problems/incontinence, arthritis, bone/back/joint/muscle problems, infectious disease, skin problems), which were present in the past 12 months and were diagnosed by a doctor or other health professional, was calculated. Disability was defined as having one or more difficulties with seven types of activities of daily living (ADL): personal care, medical care, preparing meals, mobility, shopping, housework, practical tasks such as decorating, dealing with paperwork and managing money (Brewin and Wing, 1989).

The level of social support was assessed by seven questions on whether: family and friends did things to make them happy, made them feel loved, could be relied on no matter what, would see that they were taken care of no matter what, accepted them just the way they are, made them feel an important part of their lives, and gave them support and encouragement. The answer options to these questions consisted of a three-point scale: 'not true (coded = 0)', 'partly true (coded = 1)', or 'certainly true (coded = 2)'. Following a scoring method used in a previous publication (Wickham et al., 2014), the answers to these items were summed to create a scale score that ranged from 0 to 14 with higher scores indicating greater social support (Cronbach's α = 0.88).

2.2.4. Sociodemographic variables and stressful life events (control variables)

Sociodemographic variables consisted of age (16–34, 35–59, ≥ 60 years), sex, equivalized income tertiles (high ≥ £29826, middle £14,057- < £29826, low < £14,057), education [qualification (degree, non-degree, A-level, GCSE, other): yes or no], ethnicity (white British or other), and marital status (married/cohabiting, single, widowed/divorced/separated). Respondents' experience of potentially stressful life events was assessed with 18 questions on the lifetime occurrence of events such as serious illness/injury/assault to oneself or others, death of a family member, financial crises, sexual abuse etc with 'yes' or 'no' answer options (complete list can be found in Appendix 1). The total number of stressful life events was calculated (Koyanagi et al., 2015a).

2.3. Statistical analysis

The analyses were done with Stata version 14.1 (Stata Corp LP, College Station, Texas). As the focus of the study was on PLEs not reaching the clinical threshold for a psychosis diagnosis, those with definite or probable psychosis were excluded (definition provided in Appendix 2) from the analysis (n = 40). The difference in sample