A survey of psychosis risk symptoms in Kenya

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Abstract

Defining the prepsychotic state in an effort to prevent illness progression and the development of disorders such as schizophrenia is a rapidly growing area of psychiatry. The presentation of psychotic symptoms can be influenced by culture; however, there has not been any previous assessment of psychosis risk symptoms in the continent of Africa. Our study aimed to measure the prevalence of psychosis risk in a community sample in Nairobi, Kenya, and to evaluate the effects of key demographic variables.

A culturally modified version of the 12-item PRIME-Screen (mPRIME) was self-administered by 2758 youth (aged 14-29 years) recruited through house-to-house visits in Nairobi, Kenya. The prevalence and severity of psychosis risk items from the mPRIME and the effects of sex and age on symptoms were evaluated. k-Means cluster analysis was used to identify symptom groups.

Depending on the mPRIME item, 1.8% to 19.5% of participants reported certainty of having had a psychosis risk symptom. Overall, 45.5% reported having had any psychosis risk symptom. Females had a significantly higher mean severity score on items evaluating persecutory ideation and auditory hallucinations. Symptom severity on 5 items showed a modest ($R = 0.09-0.13$) but significant correlation with age. Cluster analysis identified 4 groups of participants: normative (55%), high symptom (11%), intermediate symptom (19%), and grandiose symptom (15%).

Psychosis risk symptoms appear to be highly prevalent in Kenyan youth. Longitudinal studies are needed to determine the correlation of identified symptoms with transition to psychotic illness, as well as the associated functionality and distress, to develop appropriate intervention strategies.

1. Introduction

Schizophrenia and other psychotic disorders are among the most disabling psychiatric disorders, estimated to affect approximately 3% of the world's population [1]. Early detection of psychosis has been associated with less severe symptoms and fewer hospitalizations upon emergence of psychotic illness [2], which has a profound importance when considering strategies of efficient and cost-effective health care delivery [3]. Preventing the future development of a severe psychotic disorder is regarded as among the most effective ways to reduce this potentially devastating burden

on the affected individual and family members [4]. In sub-Saharan Africa, where financial and health care resources for managing psychotic disorders are extremely limited, the need for effective preventive strategies before disorder onset is therefore fundamental [5].

The ultra-high-risk (UHR) criteria, a concept of early detection of help-seeking patients at short-term risk of psychosis, have become an increasing focus of current research [6]. Retrospective studies have confirmed an average prodromal period (ie, period before disorder onset) of 5 to 6 years [7], and the introduction of UHR criteria has significantly advanced the possibility of indicated prevention during this period [6]. The substantial body of UHR research has led some authors to create criteria for the identification of UHR individuals using structured interviews [8]. These schedules generally identify 3 groups of UHR: those at

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familial high risk, those with attenuated positive symptoms, and those with brief limited intermittent psychotic symptoms. Studies have indicated that 16% to 54% of the youth who meet the current UHR criteria develop a major psychotic disorder (eg, schizophrenia, schizoaffective disorder, and bipolar or unipolar depression with psychotic features) within 1 to 2.5 years [6,9,10].

The PRIME-Screen [11,12] is a self-reported instrument based on the Structured Interview for Psychosis-Risk Symptoms [8] and designed to enable rapid identification of those at risk for psychotic disorders. It consists of 12 items covering positive symptoms and uses a self-rated scoring system of between 0 (definitely disagree) and 6 (definitely agree), with a score of 3 indicating "not sure." Using limited samples of patients, a high sensitivity and a perfect specificity have been reported [11], although predictive validity has not been examined. General agreement on what constitutes the UHR state using the PRIME-Screen has not been established, although a score of 6 in at least 1 item is considered suggestive [11,12]. A modified version of the PRIME-Screen, which considered the duration of symptoms, showed a specificity and a sensitivity (against the Structured Interview for Psychosis-Risk Symptoms as a criterion standard) of 0.74 and 1.00, respectively, and a concordant validity of 0.43 [12]. A brief self-administered screen has a potential advantage in evaluating the prevalence of psychosis risk symptoms in large community settings where administration of a more extensive, time-consuming semistructured interview may not be feasible. Self-administration may also reduce inherent biases that may exist in researcher-assisted interviewing, particularly in cultures where certain questions may seem unfamiliar.

There have been no previous published reports evaluating prodromal or clinically high-risk individuals in the continent of Africa [5]. The limited data available from more developed countries may not be representative of Africa, as the presentation of schizophrenia and psychosis differs across cultures [13,14]. Epidemiologic studies in Africa suggest that there may be differences in the prevalence of psychotic illness across cultures [15], although there have been variable results across studies and surveyed populations within the continent. For example, the prevalence of schizophrenia in rural African communities has ranged between 4.3 and 60.0 per 1000 [16-18], which is lower than that typically reported in Western countries. However, such comparisons are limited by cultural differences in the worldview of concepts, which may influence the perception of psychotic illness [19] and, thus, the estimated prevalence.

Our primary aim was to evaluate the prevalence of various psychotic risk symptoms in a large community sample (n = 2758) in Nairobi, Kenya, using a culturally modified version of the PRIME. We explored the effect of gender on symptom manifestation, hypothesizing that symptoms will be more prevalent in males compared with females, consistent with previous studies showing higher rates of schizophrenia and psychotic experiences or an earlier age of onset in males [20]. Age effects on reporting psychosis risk were also evaluated, to gain insight into screening questions that may be more useful at various stages of development. Finally, we explored subject reports on the severity of specific psychosis risk symptoms to identify groups of subjects, using cluster analysis.

2. Methods

2.1. Recruitment

Participants were recruited between August 9 and 26, 2010, through house-to-house visits in Kangemi, a slum neighborhood of the city of Nairobi, Kenya, located 6 miles from the city center. Conditions in Kangemi are very poor, and many of its residents lack access to basic services, including electricity and running water; however, most youth attend public schools and are proficient in reading and writing in English. There were 8 recruiters involved in the study. Recruiters were trained third- and fourth-year nursing students from the University of Nairobi. Written and signed consent was obtained from all participants, who were then asked to fill the questionnaire on their own, with staff available for questions if needed. There were 2800 individuals who were approached to participate in the study and 2758 who agreed to participate. The study was approved by Washington University Medical School's institutional review board, the Kenyan Medical Research Institute, and the Ministry of Education, Science, and Technology, Kenya.

2.2. Assessment

Participants were asked to complete the 12-item PRIME-Screen, which was slightly modified to be better understood by local Kenyan youth (mPRIME). Modifications were determined after a series of discussions by local Africa Mental Health Foundation (AMHF) researchers and Washington University researchers. Item modifications were relatively minor and involved minimal edits to the phrasing of some questions. In addition, item 9 of the original PRIME-Screen was deleted because it was felt that the statement "I think I might feel like my mind is playing tricks on me" would be difficult to understand in the local culture. We substituted this item with another: "Has your mental state or thinking worsened in the last year" to evaluate recent change in the subject's experiences. The PRIME-Screen is structured such that each item can be answered on a severity scale: 0, definitely disagree; 1, somewhat disagree; 2, slightly disagree; 3, do not know; 4, slightly agree; 5, somewhat agree; and 6, definitely agree. For purposes of evaluating items as continuous measures, "don't know" answers were excluded in subsequent analyses, and scales were condensed into 0- to 5-range scales.