An exploration of how psychotic-like symptoms are experienced, endorsed, and understood from the National Latino and Asian American Study and National Survey of American Life

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Abstract

Objective—To examine racial/ethnic differences in the endorsement and attribution of psychotic-like symptoms in a nationally representative sample of African Americans, Asians, Caribbean Blacks, and Latinos living in the United States.

Design—Data were drawn from a total of 979 respondents who endorsed psychotic-like symptoms as part of the National Latino and Asian American Study (NLAAS) and the National Survey of American Life (NSAL). We use a mixed qualitative and quantitative analytical approach to examine sociodemographic and ethnic variations in the prevalence and attributions of hallucinations and other psychotic-like symptoms in the NLAAS and NSAL. The lifetime presence of psychotic-like symptoms was assessed using the World Health Organization Composite International Diagnostic Interview (WMH-CIDI) psychotic symptom screener. We used logistic regression models to examine the probability of endorsing the four most frequently

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occurring thematic categories for psychotic-like experiences by race/ethnicity (n>100). We used qualitative methods to explore common themes from participant responses to open ended questions on their attributions for psychotic-like symptoms.

Results—African Americans were significantly less likely to endorse visual hallucinations compared to Caribbean Blacks (73.7% and 89.3%, p<.001), but they endorsed auditory hallucinations symptoms more than Caribbean Blacks (43.1% and 25.7, p<.05). Endorsing delusions of reference and thought insertion/withdrawal were more prevalent for Latinos than for African Americans (11% and 4.7%, p<.05; 6.3% and 2.7%, p<.05, respectively). Attribution themes included: *supernatural, ghosts/unidentified beings, death and dying, spirituality or religiosity, premonitions, familial* and *other*. Respondents differed by race/ethnicity in the attributions given to psychotic like symptoms.

Conclusion—Findings suggest that variations exist by race/ethnicity in both psychotic-like symptom endorsement and in self-reported attributions/understandings for these symptoms on a psychosis screening instrument. Racial/ethnic differences could result from culturally sanctioned beliefs and idioms of distress that deserve more attention in conducting culturally informed and responsive screening, assessment and treatment.

Keywords

Psychotic Symptoms; System Endorsement; Hallucinations; Delusions; Culture; Ethnicity; Race

Introduction

Characterized most commonly by visual and auditory hallucinations, symptoms of psychosis also include delusions, disordered thinking, disorganized speech, and sometimes physical or social impairment (APA, 2000). Amongst racial and ethnic minorities, even when they do not meet the full criteria for the disorder, Black Americans are significantly more likely to endorse hallucinations and be diagnosed with schizophrenia than their White counterparts (Robins & Regier, 1991; Ihara et al., 2009; Strakowski, Flaum, Amador, & Bracha, 1996; Arnold et al., 2004; King et al., 2005). Similar patterns have also been observed in non-U.S. based studies of Caribbean Blacks and European Whites (Cohen, Berment, & Magai, 1997; Xanthos, 2008). The different pathways by which a patient is introduced to mental health services and treatment is not well understood (Jarvis, 2007). Upon closer examination, complex patterns seem to emerge regarding the mental health status of Black Americans, with varying patterns emerging for different indicators of mental health (Williams, Gonzales, et al., 2007; Williams & Earl, 2007). For example, compared to Whites, Blacks have lower rates of mood, anxiety, and substance disorder but elevated rates of schizophrenia. Blacks also have lower levels of psychological well-being (happiness and life satisfaction) than Whites but higher levels of psychological distress (Williams & Earl, 2007).

It remains unclear whether the observed findings reflect true clinical differences, a sociocultural phenomenon, or whether there are biases in the diagnosis of psychiatric disorders for Black patients as compared to Whites and other racial and ethnic minorities (Adebimpe, 1981; Bell & Mehta, 1981; Kessler, Birnbaum et al., 2005; Treirweiler et al., 2006). For instance, some evidence suggests that the same symptom presentation can lead to

a diagnosis of schizophrenia in African Americans and a diagnosis of depression in Whites (Neighbors, Jackson, Campbell & Williams, 1989; Snowden & Cheung, 1990; West et al., 2006). Although the evidence highlights several factors that could influence the assignment of a psychiatric diagnosis, including the race of the diagnosing provider (Trierweiler et al., 2006), the clinical setting (Hampton, 2007), or the type of diagnostic tool (Neighbors, Trierweiler, Ford & Muroff, 1999), African Americans often have less desirable routes into mental health services as compared with Whites (Merritt-Davis & Keshavan, 2006). Delays in accessing treatment can contribute to more severe distress and symptoms at presentation. This can result in increased rates of hospitalization, lengths of stay, long-term functional disability, and poor outcomes. Furthermore, African Americans are more likely than Whites to present mental health related concerns to primary care providers, who have limited to no training in mental health assessment (Merritt-Davis & Keshavan, 2006).

The potential pathways to psychiatric care can result in either a higher rate of psychotic-like symptom presentation due to acuity and severity at presentation, or complicated and suboptimal clinical assessments, which can impair appropriate diagnosis of psychotic-like behavior in African Americans. This may be particularly salient for Black Americans who, during clinical encounters, may be perceived as being less engaged or resistant when exercising a level of caution, skepticism, or "healthy cultural paranoia" as a result of previous perceptions of negative, discriminatory, or racist interactions, both within and outside of clinical settings (Ridley, 1984; Whaley, 2001).

Hallucinations presenting in the context of certain sociocultural and spiritual experiences can also complicate the clinical assessment and appraisal process (Trierweiler, et al., 2006). In fact, several population studies have shown that 10–25% of the general (non-psychiatric) population has had hallucinatory experiences including visions or voices with no psychiatric basis (Menezes & Moreira-Almeida, 2010). There is a growing body of research that suggests that elevated rates of hallucinations by Latinos are deeply embedded within a culture-bound phenomenon (Geltman & Chang, 2004; Oflson et al., 2002; Vega et al., 2006). Yet, little is known about whether it truly reflects or indicates mental illness (Pierre, 2001).

The predisposition to experience hallucinations is multi-dimensional and could be attributed to a number of factors. Menezes and colleagues (2010) discovered that individuals who exhibit high religiosity are more likely to endorse experiencing hallucinations without manifesting the decline in functioning that is often associated with psychotic disorders (i.e., schizophrenia). On the other hand, individuals affected by psychotic disorders can also report religious/spiritual content as part of their delusions and hallucinatory experiences (Siddle, Haddock, Tarrier & Faragher, 2002). The distinction between religion as culture and religion as pathology within the context of psychosis creates difficulty in assessing whether observations of compromised functioning represents underlying pathology (Pierre, 2001).

Diagnostic criteria for psychosis that are based on Western standards may not account for "non-traditional" ways in which people of other racial/ethnic backgrounds express external distress. For instance, limited information is available on Asian Americans and psychosis; yet some have found that on initial presentation, psychotic symptomatology may be more severe among Asian Americans as compared to other groups (Durvasula & Sue, 1995).

Some reasons for this disparity have been linked to feelings of stigma and shame around issues of mental health that leads to a delay in appropriate and timely care (Ferron, Barron & Chen, 2002). It is also possible that for Asian cultures, believing in the interplay of spirituality and supernatural forces are more connected to cultural practices and beliefs than psychopathology (Kim, 2006).

Given the potential depth and breadth of the ways in which culture can mediate the expression of what might be considered psychotic-like experiences, the accuracy of diagnosis and efficacy of treatment for psychotic disorders depends on the recognition of potential racial/ethnic/cultural variations and influences on symptom presentation. Not attending to sociocultural influences, limits diagnostic accuracy and the quality of psychiatric care for those who are most in need. The objective of the current study was to take a mixed method analytical approach to examining the prevalence, sociodemographic and attributional differences in endorsement of psychotic-like symptoms by race/ethnicity using a nationally representative sample of African Americans, Asians, Caribbean Blacks, and Latinos living in the United States.

Methods

Parent Studies

Data were drawn from the National Latino and Asian American Study (NLAAS; Alegría et al., 2004) and the National Survey of American Life (NSAL; Jackson et al., 2004). Both studies were a part of the National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys (NIMH CPES; Pennell et al., 2004) and provide a previously unavailable opportunity to explore the heterogeneity of racial and ethnic categories within the U.S. with regards to the prevalence of psychiatric disorders and psychotic-like symptomatology. The surveys include non-institutionalized, U.S. household residents 18 years and older. As described elsewhere (Heeringa et al., 2004; Pennell et al., 2004), data collection for the NLAAS and NSAL studies were conducted independently using an adaptation of a multiple frame-approach to estimation and inference for population characteristics (Hartley, 1974). This process allows for design-based analysis weights that combine the two datasets for the quantitative portion of this analysis (Heeringa et al., 2004). Institutional Review Board approval was obtained from Harvard University, the University of Michigan, and the University of Washington.

The NSAL, initiating in February 2001 and ending in June 2003, is the largest study of Black mental health in the United States. The NSAL included a national sample of Caribbean Blacks (N=1,438; 29.7%) and African Americans (N=3,570; 70.3%), allowing for within-race comparisons. The response rate was 70.9% for the African-American sample and 77.7% for the Caribbean Black sample (Heeringa et al., 2004; Neighbors et al., 2007). African American respondents self-identified as Black and did not report Caribbean ancestry. Caribbean Blacks self-identified as Black and answered affirmatively to: (1) being of West Indian or Caribbean descent, (2) being from a Caribbean country, or (3) having parents or grandparents who were born in a Caribbean country (Neighbors et al. 2007). Starting May 2002 and continuing through November 2003, the NLAAS includes a national sample of Asian (N=2,095; 45.1%) and Latino (N=2,554; 54.9%) Americans. The response

rates were approximately 73% for the total sample, 76% for Latinos, and 66% for Asians (Heeringa et al., 2004).

Professional interviewers from the University of Michigan Survey Research Center conducted interviews for both studies, with 93% of them being administered in English and 8% in other languages (Spanish, Mandarin, Cantonese, Tagalog, and Vietnamese) (Pennell et al., 2004). Interviewers and respondents were matched by race/ethnicity in the NSAL and by cultural background and language preferences in the NLAAS (Pennell et al., 2004). Interviewers were trained to be sensitive to issues of cultural, racial, and socioeconomic diversity when asking and dealing with sensitive questions and information. Interviews were conducted in-person and lasted between two and a half to three hours for each study (Pennell et al., 2004).

Psychosis Screen

The lifetime presence of psychotic-like symptoms was assessed using the World Mental Health (WMH) Survey Initiative version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI) psychotic symptom screener (Kessler & Ustun, 2004). The structured diagnostic instrument was used to screen for proxy data on the prevalence of psychotic disorders. Included sections asked about six symptoms that the DSM-IV-TR (APA, 2000) considers as predictors of non-affective psychosis (NAP) (Kessler et al., 2005). They are: 1) visual hallucinations, 2) auditory hallucinations, 3) thought insertion/withdrawal, 4) delusions of control, 5) delusions of reference, and 6) persecutory delusions.

Administered using a skip patterned sequence, each section began by asking the respondents if they have ever experienced the symptom (e.g., having visions or hearing voices). An affirmative response led to a series of questions asking whether the symptom occurred when dreaming, half-asleep, or under the influence of alcohol or drugs. If the experience occurred when the person was alert and not under the influence of substances, the lifetime frequency of the particular experience was asked. In an effort to obtain additional information about the person's experience, two open-ended questions, that were not a part of the original WHO WMH-CIDI instrument, were included in psychosis screen sections of the NLAAS and NSAL. If the sequence of responses led to an endorsement a particular experience when the respondent was alert and not under the influence of substances, the two open-ended questions were asked. These questions requested a brief explanation of: 1) a time when the experience happened, and 2) what the respondent believed caused the experience to happen. For the purposes of this study, hereafter, this will be referred to as attribution.

Inclusion Criteria

Respondents were included in the current study if they: 1) positively endorsed at least one psychotic-like symptom; 2) were 18 years of age or older; 3) indicated that they were not half asleep, dreaming, or under the influence of substances at the time of the experience; and 4) responded to at least one of the open-ended sections of the psychosis screen (Kessler & Ustun, 2004). Respondents who did not endorse a psychotic-like symptom were not included in the sample. Approximately, 10% (n=979) of the pooled sample met inclusion

criteria. Of these respondents, 427 were African American (12% of the total NSAL African American sample), 152 were Caribbean Black (10.6% of the total NSAL Caribbean Black sample), 121 were Asian (5.8% of the total NLAAS Asian sample), and 279 were Latino (10.9% of the total NSAL Latino sample). In the NSAL non-Latino Whites were not administered the psychosis screen questions and the NLAAS did not include a White sample, therefore, this study does not include a White sample.

Analysis

Qualitative Data Analysis

We began with open coding to identify the content of the open-ended interview responses and to develop an initial set of thematic categories (Miles & Huberman, 1994). Using Microsoft Excel software, individual responses were read and coded by two independent researchers. Rather than code for segments within the explanations, researchers were trained to consider the entire content of the open-ended response. For instance, the following is a response related to a coding category called "death and dying" under visual hallucination: "when my grandpa passed away, a week after his burial I came in my room and he was standing there." In many instances, respondents provided responses for more than one psychotic-like symptom. Out of the 979 total respondents who endorsed psychotic symptoms, 696 (71%) endorsed at least one psychotic-like symptom, 216 (22%) endorsed at least two symptoms, and 67 (7%) endorsed at least three or more psychotic-like symptoms.

Respondents sometimes provided complex answers that could be coded into multiple categories; therefore categories are not mutually exclusive. To assist with coding, the first author and her research team followed six basic components put forth by MacQueen and colleagues (1998) to develop a codebook. The process involved naming the code, developing a brief and a full definition, developing a set of guidelines for when to and not to apply the code, and providing examples for the coding team. Using the codebook, two graduate-level researchers coded a random subset of cases to establish reliability. The process yielded statistically significant kappa coefficients above 0.7, thus enabling a decision on the final coding categories for each symptom.

Quantitative Data Analysis

All statistical estimates were weighted specific to NSAL and NLAAS samples to adjust for differential probabilities of selection and non-response. Analyses were conducted using STATA10 software (StataCorp, 2007) to account for the complex sampling design. First, design-based F-tests derived from the Rao-Scott chi-square technique were performed to examine differences in thematic content of each symptom across the four race/ethnic groups. A probability threshold of $p < 0.05$ represents the cutoff value for assessing statistical significance. Next, we ran pairwise post-hoc comparisons, with African Americans as the reference group, to further detect within race/ethnic group differences.

Of the four race/ethnic groups that we included, African Americans had been most researched in the literatures, and thus selected as the reference category. In doing this, we were also able to examine for differences between African Americans and Caribbean Blacks.

Prior to the inception of the NSAL, few national studies reported within group differences for individuals of African descent residing in the United States. Due, in part, to limited sample sizes and self-reports, these groups are usually collectively categorized as "Black," "Black American" or African American.

Finally, we ran logistic regression models to examine the association related to the probability of endorsing the four most frequently occurring thematic categories (n>100) by race/ethnicity across any psychotic-like experience. The strength of the associations are presented as odds ratios with 95% confidence intervals. Logistic regression models were run independently for attributions characterized as *supernatural/spirits/ghosts* (n=280), *spirituality/religion* (n=182), *death/dying* (n=161), and *premonition* (n=123) on race/ ethnicity. In order to examine the influence of SES and demographic factors we ran each model twice. First, we adjusted only for demographic differences (age, gender, marital status, geographic region, birthplace and type of disorder) (Panels 1 and 1a). Then, covariates measuring the respondent's education level and annual household income were added to each model as a proxy for SES differences (Panels 2 and 2a).

Results

Study Sample

Respondents were between 18 and 97 years old with a median age of 40 years (SD=15.95). However, there were no significant differences in age amongst the four race/ethnic groups. There were significantly more Asian and Latino males (55% and 51%) than African American males (40%). In comparison to the other groups, African Americans were less likely to be married. Asians were over three times more likely to report 16 or more years of education than African Americans (37% vs. 11%). As illustrated in Table 1, the overall distribution of sociodemographic variables were examined across the four race/ethnic groups and subsequently analyzed using African Americans as the reference category to determine differences between the race/ethnic groups that may not have been detected.

Reflective of the sampling design, the majority of African Americans were from the southern region of the United States (46%), Caribbean Blacks were mostly from the northeast (57%), and most Asians (63%) and Latino (56%) resided in the western region of the United States. African Americans overwhelmingly reported being born in the United States (98%) where as 68% of Asians were born abroad. Close to half of Caribbean Blacks and Latinos reported being born outside the United States. Using African Americans as the reference group, the distribution of the average annual household income varied. For instance, most Asians reported an annual household income of $75,000 or more as compared to African Americans whose annual income clustered below $35,000. Compared to African Americans, a higher percentage of Latinos reported an annual household income of $75,000 or higher (6% vs. 14%, respectively). No significant difference in annual household income was observed between African Americans and Caribbean Blacks.

Endorsement of Psychotic-Life Symptoms across Race/Ethnicity

For lifetime prevalence of psychiatric disorders, Asians and Latinos reported lower rates of any anxiety disorder (22% and 28%) as compared to African Americans (38%). Asians were less likely to report having any disorder than African Americans (34% vs. 53%). No significant differences were observed for the prevalence of any mood disorder or for any substance disorder across racial/ethnic groups.

Table 2 provides useful information about the lifetime prevalence of endorsing specific psychotic-like symptoms within the sample of persons who endorsed at least one symptom across race/ethnicity (n=979). Overall, some significant differences in endorsement of particular symptoms were observed for African Americans as compared to both Caribbean Blacks and Latinos. African Americans were significantly less likely to endorse visual hallucinations compared to Caribbean Blacks (73.7% and 89.3%, p<.001), but they endorsed auditory hallucinations symptoms more often than Caribbean Blacks (43.1% and 25.7, p<.05). Endorsing delusions of reference was more prevalent for Latinos than for African Americans. (11% and 4.7%, p<.05), as was endorsing thought insertion/withdrawal (6.3% and 2.7%, p<.05).

Results presented in Table 3 include the prevalence of symptom endorsement and attribution of themes by race/ethnicity. In this table, any respondent who endorsed the symptoms were reported. Therefore, it is possible that an individual could have endorsed more than one symptom. The six psychotic-like symptoms are discussed according to the frequency of endorsement. For example, across race/ethnicity, visual (n=701) and auditory (n=425) hallucinations were most frequently endorsed, followed by persecutory delusions (n=84), delusions of reference (n=71), thought insertion/withdrawal (n=55), and delusions of control (n=36).

Visual Hallucinations

Of the 701 individuals who endorsed visual hallucinations, about 9% (n=63) were Caribbean Black, 8% (n=56) were African American, 6% (n=42) were Latinos, and about 4.6% (n=32) were Asian. Visual experiences were attributed to five major thematic categories: *supernatural, ghosts/unidentified beings*, *death and dying*, *spirituality or religiosity*, *premonitions*, and *other*. Respondents differed significantly in attributions of *supernatural, ghosts/unidentified beings* and *death and dying*.

The following demonstrates some of the meaning (attributions) that respondents attached to their experiences of visual hallucinations. Some considered their visual hallucinations as part of their unique "ability." For instance, one Asian respondent used his "ability" to see and "tap into" the future by becoming an online psychic, while a Latina considers the fact that she has the ability to "see" and "sense" the spirits of those who "come back to ask for guidance" as normal because it runs in her family. Visions of ghosts and other beings were also discussed by way of celestial beings like angels, who as one Latina describes, *it looked like smoke…an angel protected me, [it] pushed me out of the way and about a minute later a car sped 100 miles an hour behind me.*

On the other hand, visions of death and dying were more common for African Americans as compared to the other groups. Death and dying was often associated with seeing a friend or family member during a time when the person experienced some form of stress or trauma. To illustrate, while reporting being under distress to the point of "giving up," the following African American male saw his deceased grandfather and aunt, *when I'm in harm's way or when I'm going through something traumatic. My grandfather and Aunt Fannie come to me and let me know everything is going to be okay.* Around the time of the September 11th attack in New York, an African American woman, reported seeing her dead husband: *it was at night [on] September 11th. I was yelling for help…when husband died something touch my breast, I saw and felt him touching me.* Although it is not clear from her interview, this woman appears to have experienced some form of trauma as a result of losing her husband to the attacks.

Auditory Hallucinations

The following five thematic categories emerged for auditory hallucinations (n=425): *unidentified voices, spirituality or religiosity, familial, premonition/warning*, and *other*. Within the population, the prevalence of hearing voices while being awake, not dreaming or under the influence of substances, was about five percent for African Americans and Latinos and about three percent for Caribbean Blacks and Asians. Compared to African Americans, Caribbean Blacks and Latinos reported more unidentified voices. Spiritual and religious types of voices were nuanced and more commonly reported for African Americans than Latinos. Furthermore, for African Americans hearing voices seemed to provide a form of emotional or physical guidance from God as described by one male: *a voice was told me that God didn't know me, but he was going to get me. I was trying to get to know Christ at that time in my life and this confirmed my decision.*

Another African American woman received a signal from her prayers: it was a second opinion for me to follow [referring to the voice]. It usually happens when I do not want to do something and I know that I should. That's when I'll hear the voice telling me what I should do. The voice is in my head, but I think that it is God answering my prayers. I prayed and told him to send me a signal.

On the other hand, for Latinos, voices were more conversational. To illustrate, one woman described a conversation that she had about ten years ago: *it was 1999 [in] June. That night I heard a beautiful man's voice telling me beautiful things to do. I got up and wrote them down, but I did not do those things…[later] I asked God to give me life so I could do it [referring to the previous tasks]. I heard a man's voice and he said, 'I have returned to you twice and gave you some orders. You have not done them yet.' He said I will find love, valor, justice and truth.*

In Table 4 we focused exclusively on examining sociodemographic differences using 4 models of attributions that were most commonly endorsed for auditory and visual hallucinations—supernatural, spirits and ghosts, spirituality and religiosity, death and dying and premonition. Those differences were divided into two panels. Panel 1, includes findings adjusted for age, gender, marital status, geographic region, birthplace and type of disorder. Findings in Panel 2 were adjusted using a combination of the previous demographic

variables and SES variables (education level and annual household income). We used African Americans as the reference group in Panels 1 and 2. The four commonly discussed attributions emerged across each of the six symptoms (including the data included in the "other"[1] category), and had a sample size greater than 100.

When the models were run with the demographic variables, the patterns of attribution were consistent between African Americans and Latinos. Compared to African Americans, Latinos were less likely to consider spirituality/religiosity (OR=0.45, 95% CI=0.24–0.83) or death and dying (OR=0.42, 95% CI=0.2–0.89) as it related to their psychotic-like experiences. Similarly, this table shows that Latinos were more likely than African Americans to associate their experiences (Panel 1) to something related to the supernatural/spirits or ghosts (OR=1.80, 95% CI=1.01–3.20). After adjusting for demographic and SES variables, Asians were more than three times (OR=3.24, 95% CI=1.31–8.04) as likely to mention supernatural/spirits or ghosts compared to African Americans.

Discussion

Visual hallucinations across race/ethnicity are relatively common in prevalence studies and we found similar patterns in this non-clinical community-based sample. Conversely, the prevalence of hearing voices while being awake, not dreaming, or not being under the influence of substances, is less common. Our findings suggest that variations exist by race/ethnicity in psychotic-like symptom endorsement as well as in self-reported attributions/understandings of these symptoms using a psychosis screening instrument. Motivated by preceding studies that point to significantly more endorsements of psychotic-like symptom by Blacks Americans (African Americans and Caribbean Blacks) (Arnold, et al., 2004; Ferran, Barron, & Chen, 2002; King, et al., 2005), this study demonstrates the importance of further examining heterogeneity within the individuals of African descent in the U.S. and across other racial/ethnic populations in the United States.

Furthermore, our results suggest that psychotic like symptoms could be indicative of underlying distress, depression, and even coping with discrimination and other stressful circumstances which, if better understood and better assessed could assist in providing more culturally responsive care. Issues of racism, discrimination, and other race/ethnic-based microaggressions for Black people have long been linked with mental health and mental illness (see Fanon, 1952; Grier & Cobbs, 1968; Pierce, 1970). Several population-based studies have often associated perceptions of discrimination to mental health status (Williams & Mohammed, 2009; Pascoe & Richman, 2009; Pieterse et al., 2012). Even after adjusting for factors like income, education, gender and age, reports of higher levels of discrimination for Blacks, within and outside of the U.S., are associated with the endorsement of psychotic-like symptoms and poorer mental health status, as compared to their White counterparts (Janssen et al., 2003; Veling et al., 2007). Moreover, longitudinal studies have found that discrimination precedes illness (Williams & Mohammed, 2009; Pascoe & Richman, 2009).

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[1]The "other" category included residual categories with small sample/cell sizes.

In our study, African Americans were more likely than the other racial/ethnic groups to attribute their hallucinatory experiences, specifically visual hallucinations, to issues of death and dying (e.g., seeing a dead relative), which could stem from religious or socially transmitted, cultural schema for coping with death and dying as seen in the literature (Alim, et al., 2006). If an African American patient reports that s/he is experiencing visual hallucinations of a recently deceased family member, then further inquiry regarding the meaning of that hallucination for the patient before assigning a diagnosis of psychosis will likely to be an important step to consider. If other psychotic symptoms and functioning deficits are not present, then this supports exploring the presentation of normal grief or loss.

The results of this study are not meant to encourage stereotypes for identifying psychosis in specific racial/ethnic groups, but to support the idea that in the presence of these experiences, the meaning and presentation can vary significantly by race/ethnicity. The specific themes that we found among different groups may suggest thematic points of entry for discussing the meaning of hallucinatory experiences and other potential psychotic-like symptoms with racially and ethnically diverse patients.

Although significant differences were not found by race/ethnicity for having concerns about the intentions and actions of others, it was the third most commonly induced symptom. This could be an important concern for racial and ethnic communities who a history of oppression and discrimination (Morgan, et al., 2009). For example *responsive paranoia* has been used to describe how racial/ethnic communities function as an adaptive mechanism for coping with a life plagued by prejudice and discrimination (Williams, Neighbors & Jackson, 2003). This may be particularly relevant for Blacks who may exercise a level of caution, skepticism, or "healthy cultural paranoia" as a result of previous perceptions of negative, discriminatory, or racist interactions, both within and outside of clinical settings (Ridley, 1984; Whaley, 2001). This information could have important implications for understanding how feelings of caution, skepticism, distrust, or self-preservation concerning the actions and intentions of others affects how minority groups interpret and disclose information about perceptual experiences such as hallucinations during the clinical assessment. Practitioners who are uninformed about another culture and related experiences of discrimination or racism, or who harbor negative stereotypes about that culture, may tend to diagnose psychosis or paranoia when symptoms are better accounted for by coping strategies for underlying stressors. To complicate issues, some research has suggested that chronic experiences of discrimination and racism can be a risk factor for the development of psychosis in individuals who are vulnerable (Veling, Hoek, et al., 2008). This further points to the importance of examining adversity, discrimination, and distress and how they might impact the presentation of psychotic like symptoms.

There is a body of evidence that supports the notion that Asians have strong beliefs in the ability of spirits to influence their lives (Uba, 1994). Even though the Uba study was not specific to severe mental illness, it helps to provide a cultural context for mental health providers to better anticipate these types of explanations from Asian patients. Diversity for Asian Americans spans across language, ethnicity, and spirituality/religiosity and there are various forms of faith that could influence the way certain symptoms are shared and understood. For example, to some extent, Buddhism, Taoist, and Animist believe in the

existence of some type of external force or being (animal or otherwise). Therefore, contextualizing an experience with descriptions that may seem abnormal or related to non-human beings could be a sign of culturally sanctioned experiences and not necessarily psychotic illness. Undoubtedly, this topic could flourish from a more detailed examination with the patient, but may require overcoming stigma or mistrustfulness. In our sample of Asian Americans, there was evidence that socioeconomic status was an important factor in determining the odds of endorsing psychotic like symptoms. This may be an indication of how connected SES is to acculturation or beliefs or symptom presentation, particularly for Asian subgroups.

Also using a sample of Latinos from the NLAAS study, Lewis-Fernandez and colleagues (Lewis-Fernandez, et al., 2009) examined the relationship between the prevalence of psychotic symptoms and mental health outcomes. In that study, 9.5% of Latinos in the total sample population endorsed one or more lifetime psychotic symptoms, yet 93% of endorsers did not meet the DSM-IV, Structured Clinical Interview criteria for psychotic disorders. This supports the idea that in most cases the endorsement of psychotic-like symptoms among Latinos does not indicate or support the presence of a psychotic disorder.

To build upon the findings by Lewis-Fernandez, our study allowed us to explore common themes related to the participant endorsements of psychotic-like symptoms and suggests that Latinos tend to endorse ideas of the supernatural, including spiritual themes for their hallucinations, although to a lesser extent than the African American sample. Latinos were more likely to attribute unidentified voices to their hallucinations. Many of the themes fell into the realm of unidentified spirits or forces which at times served as protections or provided ominous warnings. Many of these themes fell into the context of spiritualist belief systems which are prevalent in many Latino cultures and are not considered "abnormal" or "uncommon." In some cases, these beliefs may actually represent a spiritual gift as opposed to a clinical disorder. (Gaviria & Wintrob, 1976; Moreira-Almeida & Koss-Chioino, 2009).

Latinos also reported that they felt something controlling or stealing their minds. It remains unclear whether these reports represent true psychosis or culturally influenced idioms of distress which reflect an expression of losing control over one's mind or life. The diagnosis of psychosis relies greatly on the evaluation of a person's language, behavior, thoughts, and perceptions in context. We can see from the our study that attributions of meaning for these symptoms vary significantly across race/ethnicity. There is also a richness of culture and context underlying those experiences that warrant close assessment in each and every individual patient presenting with symptoms that would potentially screen them in for a psychosis diagnosis. A critical aspect of that assessment should include understanding the function if these experiences in regards to the cultural, psychological, social, and spiritual saliency for the individual experiencing it.

Limitations

This is a retrospective study which asked respondents to reflect back on a non-specified time in their life and to describe and attribute meaning to their experiences. It is possible that some respondents were not able to recall their experiences as clearly as others. Furthermore,

this was a cross-sectional study that did not include in-depth narrative interviews. The researchers were not able to follow up with respondents to clarify or probe for a more detailed explanation of their experiences. The qualitative coding process did not include clinical judgment, thus limiting the opportunity to identify explanations that might be considered clinically significant by a mental health clinician. For some of the thematic categories, the cell sizes were not sufficiently large enough to stand alone in analyses, thus yielding smaller, non-interpretable, categories that could include information that would be descriptively of interest to the field if they were larger. Although we mentioned Black Americans, future research would benefit from including an African sample to better distinguish heterogeneity in psychotic-like endorsement amongst people of African descent living in the United States. Along those lines, due to small sample sizes, the current study was not able to explore ethnic heterogeneity for the Asian and Latino samples.

Key Messages

Racial/ethnic differences in psychotic-like symptom endorsement could result from culturally sanctioned beliefs, behavior and idioms of distress that deserve more attention in clinical practice. Future research and training programs should begin to acknowledge the limitations of clinical assessment methods cross-culturally because of non-equivalence in language, concepts, and norms. For instance, discussing and believing in supernatural/ghosts and guiding spirits or exhibiting paranoia could be misinterpreted as psychotic symptom presentation. Acknowledging this could effectively reduce the disproportionate prevalence of psychotic disorder diagnoses Blacks and other race/ethnic populations. Culture presents an avenue for clinicians to explore the clinical significance, context, and meaning of psychotic-like symptoms and an opportunity to build rapport and better understand their patient. Future epidemiological and clinical research should examine the prevalence of psychotic-like symptom endorsement and how it is correlated with DSM-IV psychotic and non-psychotic disorders, social functioning and coping. Similarly, improving screening instruments and tools for improving and guiding culturally competent evaluation and patient-provider discussion of these symptoms is crucial.

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Table 1

Sociodemographic Characteristics of Respondents who Endorsed At Least One Psychotic-Like Symptom by Race/Ethnicity (weighted)

	African American		Caribbean Black		Asian		Latino		AA vs. Caribbean Black[1]	AA vs. Asian[1]	AA vs. Latino[1]
	n= 427	%	n= 152	%	n= 121	%	n= 279	%			
Age category, y											
18–34	36.6		55.0		48.0		45.2				
35–49	32.9		25.0		28.4		31.8				
50+	30.6		20.0		23.6		23.0				
Overall Chi-Square[ns]									ns	ns	ns
Gender											
Male	40.1		48.3		54.6		50.7				
Female	59.9		51.7		45.4		49.3				
Overall Chi-Square *									ns	*	*
Marital Status											
Married	31.5		41.7		42.3		42.5				
Divorced/Separated/Widowed	35.3		15.8		14.4		22.0				
Never Married	33.3		42.5		43.3		35.5				
Overall Chi-Square **									*	**	**
Education Level											
11 years or less	30.2		30.9		14.7		38.5				
12 years	32.3		30.1		11.5		23.7				
13–15 years	26.9		25.4		37.0		25.9				
16+ years	10.6		13.6		36.8		11.8				
Overall Chi-Square ***									ns	***	ns
Region											
Northeast	16.4		57.2		11.6		17.5		***	***	***
Midwest	24.5		10.1		18.6		5.7				
South	46.2		25.8		6.2		20.9				
West	12.9		6.9		63.5		55.9				

	African American		Caribbean Black		Asian		Latino		AA vs. Caribbean Black[1]	AA vs. Asian[1]	AA vs. Latino[1]
	n= 427	**%**	**n= 152**	**%**	**n= 121**	**%**	**n= 279**	**%**			
Overall Chi-Square ***											
Birthplace[2]											
Born in U.S.	98.4		50.9		32.4		53.0		***	***	***
Born outside U.S.	1.6		49.1		67.6		47.0				
Overall Chi-Square ***											
Annual Household Income $											
$0–$14,999	35.4		31.0		18.6		34.7		ns	***	**
$15,000–$34,999	35.3		31.1		10.7		21.3				
$35,000–$74,999	23.3		32.8		26.7		29.6				
$75,000+	6.1		5.2		44.1		14.3				
Overall Chi-Square ***											
Type of Disorder											
Any Anxiety Disorder *	37.5		33.2		22.4		28.4		ns	**	*
Any Mood Disorder[ns]	24.6		28.5		17.6		26.4		ns	ns	ns
Any Substance Disorder[ns]	18.8		19.6		11.8		23.0		ns	ns	ns
Composite Disorder											
Any Disorder	53.3		53.1		33.6		52.0		ns	**	**
No Disorder	46.7		46.9		66.4		48.0				
Overall Chi-Square *											

*
$p < .05$;

**
$p < .01$;

***
$p < .001$;

ns
= not statistically significant

[1] African Americans are the omitted/reference category group in the chi-square analyses

[2] For the birthplace variable, there were 2 missing cases for the African American sample and 1 missing case for the Asian sample

Table 2

Lifetime prevalence of endorsing psychotic-like symptoms across race/ethnicity (weighted)

	African American		Caribbean Black		Asian		Latino		AA vs. Caribbean Black[1]	AA vs. Asian[1]	AA vs. Latino[1]
	n= 427	%	n= 152	%	n= 121	%	n= 279	%			
Endorsement of Each Psychotic-Like Symptom											
Visual Hallucinations[*]	73.7		89.3		68.2		65.4		***	ns	ns
Auditory Hallucination[ns]	43.1		25.7		39.4		48.5		*	ns	ns
Persecutory Delusions[ns]	10.2		16.7		6.8		9.7		ns	ns	ns
Delusions of Reference[ns]	4.7		8.8		8.2		11.0		ns	ns	*
Thought Insertion/Withdrawal[ns]	2.7		6.7		5.4		6.3		ns	ns	*
Delusions of Control[ns]	3.0		5.3		2.6		3.2		ns	ns	ns

*
p < .05;

**
p < .01;

***
p < .001;

ns
= not statistically significant

1
African Americans are the omitted/reference category group in the chi-square analyses

Table 3

Prevalence of symptom endorsement and attribution of themes by race/ethnicity (weighted)

	African American (%)	Caribbean Black (%)	Asian (%)	Latino (%)	Total n	(%)	Comparison across 4 racial// ethnic groups p-value
Visual Hallucinations (n=701)							
Prevalence in Population	8.4	9.4	4.6	6.1			
Thematic Categories							
Supernatural, Ghost/Unidentified Being	25.9[de]	40.4	53.8[a]	50.6[a]	269	38.8	**0.000**
Death and Dying	28.1[de]	24.4	12.2[a]	15.1[a]	148	21.4	**0.016**
Spirituality/Religiosity	17.8	14.3	8.6	14.2	102	15.3	ns
Premonition	11.7	11.1	6.1	8	87	9.7	ns
Other	16.5	9.8	19.3	12.1	95	14.8	ns
Auditory Hallucinations (n=425)							
Prevalence in Population	4.9	2.6	2.7	4.5			
Thematic Categories							
Unidentified Voice	33.9[de]	58.7[a]	40.2	49.4[a]	187	41.9	0.055
Spirituality/Religiosity	24.2[e]	15.4	19.1	11.4[a]	74	17.8	**0.050**
Familial	15.1	13.6	10.6	24.9	68	18.9	0.081
Premonition/Warning	6.2	3.3	3	3.2	29	4.5	ns
Other	20.6	9	27.2	11.2	67	16.8	ns
Persecutory Delusions (n=84)							
Prevalence in Population	1.2	2.2	0.5	0.9			
Thematic Categories							
Concerns based on Actions/Intentions of Others	57.4	50.4	39.2	41.8	38	49.5	ns
Concerns about Personal/Bodily Safety	17.5	34.1	10.5	28.2	18	22.2	ns
Didn't Explain/Refused to Answer	8.8[d]	11.9	38.2[a]	14.8	17	13.6	ns
Other	16.2	3.6	12.1	15.3	11	14.8	ns
Delusions of Reference (n=71)							
Prevalence in Population	0.5	0.9	0.6	1			

	African American (%)	Caribbean Black (%)	Asian (%)	Latino (%)	Total n	(%)	Comparison across 4 racial// ethnic groups
Thematic Categories							
Communication with Unidentified Forces	17.4	13.1	37.2	31.6	23	27.6	ns
Communication Related to Spirituality/Religiosity	37.7	52.7	23.3	12.4	14	22.3	ns
Other	44.9	34.2	39.6	56	34	50.1	ns
Thought Insertion/Withdrawal (n=55)							
Prevalence in Population	0.1	0.9	0.4	0.6			
Thematic Categories							
Forces related to an uncomfortable command or control	23.6	11.9^e	38.7	58.5^b	12	44.2	ns
Stressful/Traumatic Situation	21.9^e	7.6	12.2	3.5^a	11	9.7	0.094
Other	54.5	80.5	49.1	38	32	46.1	ns
Delusions of Control (n=36)							
Prevalence in Population	0.1	0.7	0.2	0.3			
Thematic Categories							
Didn't Explain/Refused to Answer	65.1	0	25.1	22.6	12	40.2	ns
Other	34.9	100	74.9	77.4	24	59.8	ns

*
p<0.05, Pairwise post-hoc chi-sq test for differences within race/ethnicity

[a] = Different from African American;

[b] = Different from Caribbean Black;

[c] = different from Black American(AA+CB);

[d] = Different from Asian;

[e] = Different from Latino

Table 4

Demographic and SES Differences in Attribution of Select Psychotic-Like Symptoms by Race/Ethnicity

	Model 1: Supernatural/Spirits/Ghosts	**Model 2: Spirituality/Religiosity**	**Model 3: Death/Dying**	**Model 4: Premonition**
Panel 1: Demographic Differences[1]				
	Odds Ratio(95% CI)	*Odds Ratio(95% CI)*	*Odds Ratio(95% CI)*	*Odds Ratio(95% CI)*
	n=280	*n=182*	*n=161*	*n=123*
Race/Ethnicity				
African American	1	1	1	1
Caribbean Black	1.91(0.74,4.95)	1.23(0.51,2.97)	1.03(0.40,2.60)	0.85(0.40,1.81)
Asian	2.16(0.94,5.01)	0.51(0.21,1.22)	0.34(0.10,1.19)	0.80(0.24,2.66)
Latino	*1.80(1.01,3.20)* [*]	*0.45(0.24,0.83)* [*]	*0.42(0.20,0.89)* [*]	0.84(0.37,1.89)
Panel 2: Demographic and SES Differences[2]				
	Odds Ratio(95% CI)	*Odds Ratio(95% CI)*	*Odds Ratio(95% CI)*	*Odds Ratio(95% CI)*
	n=280	*n=182*	*n=161*	*n=123*
Race/Ethnicity				
African American	1	1	1	1
Caribbean Black	2.15(0.83,5.59)	1.19(0.49,2.89)	0.95(0.36,2.53)	0.80(0.37,1.74)
Asian	*3.24(1.31,8.04)* [*]	0.45(0.18,1.09)	0.30(0.07,1.29)	0.66(0.20,2.21)
Latino	*2.09(1.16,3.78)* [*]	*0.46(0.24,0.86)* [*]	*0.36(0.17,0.78)* [*]	0.81(0.36,1.83)

[*] p < .05

[1] Models adjusted for demographic variables: age, gender, marital status, region, birthplace, and type of disorder

[2] Models adjusted for demographic variables + SES variables: education level and annual household income