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Causal Beliefs and Effects upon Mental Illness Identification Among Chinese Immigrant Relatives of Individuals with Psychosis

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Abstract

Identifying factors that facilitate treatment for psychotic disorders among Chinese-immigrants is crucial due to delayed treatment use. Identifying causal beliefs held by relatives that might predict identification of ‘mental illness’ as opposed to other ‘indigenous labels’ may promote more effective mental health service use. We examine what effects beliefs of ‘physical causes’ and other non-biomedical causal beliefs (‘general social causes’, and ‘indigenous Chinese beliefs’ or culture-specific epistemologies of illness) might have on mental illness identification. Forty-nine relatives of Chinese-immigrant consumers with psychosis were sampled. Higher endorsement of ‘physical causes’ was associated with mental illness labeling. However among the non-biomedical causal beliefs, ‘general social causes’ demonstrated no relationship with mental illness identification, while endorsement of ‘indigenous Chinese beliefs’ showed a negative relationship. Effective treatment- and community-based psychoeducation, in addition to emphasizing biomedical models, might integrate indigenous Chinese epistemologies of illness to facilitate rapid identification of psychotic disorders and promote treatment use.

Keywords

Stigma; Explanatory models; Indigenous labeling; Schizophrenia; Chinese

Introduction

Research on factors that facilitate treatment for psychotic disorders among Chinese-Americans is crucial because this group (Ying and Hu 1994) frequently delays help-seeking until already exhibiting more severe (Flaskerud and Hu 1992; Yeh et al. 2002) and psychotic forms of mental disorders (Akutsu, Snowden, and Organista 1996; Durvasula and Sue 1996). Both endorsed causal beliefs of psychiatric illness and accurate identification of symptoms as mental illness are viewed as related, but distinct steps to effective mental health service use (McCabe and Priebe 2004). The process by which relatives generate *causal beliefs* for the consumer’s problem is best understood via attribution theory, where each explanation results from a social-cognitive search for why the consumer’s difficulties occurred (Weiner 1986; Yang et al. 2004) and is informed by that culture’s lay beliefs (Lam et al. 2010). On the other hand, *labeling* is the social process of identifying a human characteristic and affixing a culturally derived label to it that categorizes it as salient,

regardless of the designations' validity (Link and Phelan 2001). Derived from medical anthropology (Kleinman and Benson 2006), we view causal beliefs as shaping labeling processes used to categorize a consumer's experience of distress, which then influences treatment-seeking. In this study, we identify classes of causal beliefs that might predict the identification of 'mental illness' as opposed to 'indigenous' forms of labeling, because according to the theory of reasoned action (Ajzen and Fishbein 1980), help-seeking behaviors involving psychiatric treatment are more likely to follow from identification of mental illness.

Traditional Chinese causal models held by the public typically identify mental illness as being caused by social, rather than biological, factors (Phillips et al. 2000; Yang et al. 2010a). Because such non-biomedical causes are incongruent with Western epistemologies of illness and may lead to greater duration of untreated psychosis (Lieberman and Fenton 2000) and poor treatment adherence (Leong and Lau 2001), psychoeducation program curricula for relatives traditionally provide biomedical understandings to promote effective treatment (Chien and Chan 2004). Yet such psychoeducation to date has occurred without considering which pre-existing causal beliefs actively predispose relatives to endorse 'mental illness' labels, versus alternative labels.

It thus remains unresolved what effects beliefs of physical causation (Yang et al. 2009), and other prominent (i.e., non-biomedical) types of causal beliefs, might have on this labeling process. From the array of non-biomedical causal models, we further differentiate between 'general social causes' (i.e., common environmental factors such as 'stress', 'work pressure') and what we classify as 'indigenous Chinese beliefs'—i.e., emic epistemologies of illness that promote alternative views of well-being (Saravanan et al. 2007). We define 'indigenous Chinese beliefs' as culture-specific beliefs that relate to an underlying Chinese system of health and illness (Kuriyama 2002), which parallel medical anthropologists' conceptualization of *illness* (Kleinman et al. 1978). In contrast to 'general social causes' which are not linked to a specific state of illness or distress, 'indigenous Chinese beliefs' specify a cause, mechanism, and course of illness. Prominent examples include: (1) being 'narrow-minded' in one's thinking which results in 'thinking becoming distressed' and subsequent interpersonal disruption (Yang et al. 2010a); (2) mystical causes resulting in 'spirit possession' and disturbances in the spirit world (Li and Phillips 1990); and (3) 'effect of past lives', whereby Buddhist beliefs suggest that an ancestor's misconduct may lead to a punishment of mental illness in one's current life (Yang 2007). Accurate knowledge of the subtypes of causal beliefs that lead to or act against identification of mental illness would enable more targeted psychoeducation.

To investigate this, we first hypothesize that due to their biomedical nature, that relatives' endorsement of beliefs of physical causation will be associated with increased mental illness labeling. Second, we hypothesize that due to their non-biomedical nature, relatives' endorsement of 'general social causes' and 'indigenous Chinese beliefs' will lead to decreased mental illness labeling. We focus on Chinese immigrant relatives because this group has been reported to be greatly involved in the initial detection of psychotic symptoms and subsequent treatment-seeking among consumers with schizophrenia (Lin et al. 1991).

Method

Procedure/Subjects

Consumers and family members were recruited from two Chinese-bilingual psychiatric inpatient units in New York City from 2006 to 2010. Eligibility criteria of consumers included: (1) Chinese birth or bilateral Chinese descent; (2) Mandarin- or English-speaking; (3) 18–50 years old; (4) Hospitalization within 1 month of interview; (5) Diagnosed with a

psychotic-spectrum disorder via the SCID; (Spitzer et al. 1992) or the SCID-Chinese Version (So et al. 2003; Yang and Link 2009)); (6) Co-residing with relative after hospitalization. Relatives were identified by the consumer and/or clinician as the family member ‘most involved in the subject’s care’ and were from 18 to 70 years of age. Included in this category were primary caregivers who were nuclear family members, spouses, and any other relatives who were actively involved.

Data from 49 relative-consumer dyads are reported (53 total dyads were interviewed; 4 cases had missing data for these analyses and were omitted). In this study, 46.9% of the caregivers were parents and 83.7% of all relatives lived with the consumer. The mean age of caregivers was 48.5 years ($SD = 14.8$ years), 40% of the sample was male, and 73.3% were married at the time of interview. Respondents had been living in the U.S. for 16.0 years on average, yet most were of poor socioeconomic background, unacculturated to U.S. norms, and spoke minimal or no English. They attended school for an average of 8.0 years and only 10.2% completed high school. Caregivers’ average annual income was \$9,840 ($SD = \$4,350$). Most of the respondents were from Mainland China (80%) and preferred to utilize Mandarin in the interview (75.5%).

The majority of the consumers were also from Mainland China (73.5%). They were on average 34.6 years old ($SD = 11.3$) and had lived in the U.S. for 12.7 years ($SD = 12.3$). They were somewhat more educated, with 26.5% having graduated from high school. Consumers’ average annual income was \$5,780 ($SD = \$2,950$). Most had been hospitalized multiple times (83.7%), averaging 5.0 hospitalizations ($SD = 3.8$) at time of caregiver interview. The majority was diagnosed with one of the schizophrenia-spectrum disorders (89.8%) and the remaining subjects had a mood disorder with psychotic features. Average age at first hospitalization was 26.0 years ($SD = 8.3$) and the average duration of illness was 8.8 years ($SD = 8.6$). Relatives’ and consumers’ written informed consent was obtained. Study protocols were approved by the Institutional Review Boards of the medical schools at Columbia University, New York University and Mt. Sinai. Lastly, there are no known conflicts of interest for the authors and the authors certify responsibility for the manuscript.

Measures

The *Causal Models Questionnaire for Schizophrenia* (CMQS; Phillips et al. 2000), an inventory of 45 folk explanations developed and validated in China, was used to identify relative’s causal beliefs about consumers’ illness. Relatives were asked to indicate endorsement of individual causes as the explanation for the consumer’s “problem” (0 = ‘no’; 1 = ‘yes’) and if so, the strength of its relationship to the problem (1 = ‘definite’; 2 = ‘definite but secondary’; 3 = ‘possible’; 4 = ‘not at all’). Three causal indices—‘physical causes’, ‘general social causes’, and ‘indigenous Chinese beliefs’—were constructed from these individual causes by summing scores (range = 0–12). Items to represent each index were chosen based on their relevance as well as their ranked frequency among all other conceptually-related items. The final indices include the three most frequently endorsed causal explanations that conceptually fit each category. Explanations describing physical dysfunction (‘heredity’, ‘head injury’, and ‘other physical causes’¹) were grouped into the ‘physical cause’ index. The ‘general social cause’ index includes general social problems that are commonly endorsed by Chinese (‘stress’, ‘work’, and ‘other social causes’²). An ‘indigenous Chinese beliefs’ index was created from traditional beliefs about the causes of mental illness (‘narrow-mindedness’, ‘spirit possession’ and ‘the effect of past lives’). It is

¹These ‘other physical causes’ included the following categories: brain-related disorder ($n = 4$), sickness in early development ($n = 4$), physical problem ($n = 3$), infectious disease ($n = 2$), and miscellaneous causes ($n = 2$).

²These ‘other social causes’ included the following categories: immigration-related stressors ($n = 8$), interpersonal conflict ($n = 7$), physical assault ($n = 5$), social isolation ($n = 3$), sociopolitical conflict ($n = 2$) and miscellaneous ($n = 3$).

important to note that these indices contain items that are conceptually related but, unlike scale items, are not necessarily correlated with each other. For example, a non-zero score on the ‘physical cause’ index could indicate that the caregiver endorsed “heredity” but not “head injury” as an explanation for his/her relative’s illness. While “heredity” and “head injury” are related in that they are both physical causes of mental illness, the endorsement of one does not affect the endorsement of the other. Hence, as per Phillips et al.’s (2000) study, we do not report traditional reliability statistics (i.e., *alpha*) that describe scales of inter-correlated items.

Relatives’ Label of Consumer Symptomatology (Jenkins 1988b) Relatives were asked to select one category: “Could the problem(s) leading to hospitalization be one of (a) ‘excessive thinking’; (b) mental illness; or (c) ‘some other problem’?” To identify recognition of mental illness, we dichotomized this outcome variable (1 = ‘mental illness’; 0 = ‘excessive thinking’ and ‘some other problem’). While relatives’ interpretations of mental illness tend to be multi-faceted (Phillips et al. 2000), we utilized this forced-choice measure for the express purpose of assessing whether the relatives’ label was *primarily* an indigenous or psychiatric one. Primary identification might then influence relatives’ help-seeking (Kleinman and Benson 2006). This measure has shown good construct validity (i.e., association with other related variables) in prior research (Jenkins 1988a, b).

Distribution of all continuous variables was examined for skewness and kurtosis to meet parametric model assumptions. T tests were conducted to determine mean differences in the causal belief indices between the ‘mental illness label’ and the ‘indigenous label’ group. From prior studies, we expect that specific sociodemographic variables (gender, older age, fewer years of education, lower income; Tieu et al. 2010; Wong et al. in press), less acculturation to U.S. society (foreign birth, fewer years in the U.S., Chinese- speaking; Li et al. 1999) and greater illness severity (greater number of hospitalizations and longer illness duration; Wong 2007) might be associated with whether relatives identify problems with a ‘mental illness’ label or not. We first identify whether these potential covariates are significantly associated with both the causal belief index and the mental illness label; any variables meeting this criterion are then controlled for. Multivariate logistic regression models were then applied to the ‘mental illness’ labeling outcome as needed, adjusting for identified covariates. Significance was set at $P < 0.05$; all analyses were two-tailed.

Results

For the Causal Models Questionnaire for Schizophrenia, the average scores for the ‘physical cause’ index was 4.6 ($SD = 1.76$), the ‘general social causes’ index was 6.4 ($SD = 2.59$), and for the ‘indigenous Chinese beliefs’ Index was 5.2 ($SD = 1.94$). For the relative’s label of consumer symptomatology, 59.2% ($n = 29$) of relatives reported that the consumer’s problem was a ‘mental illness’ as opposed to 40.8% ($n = 20$) who labeled the problem as ‘excessive thinking’ or ‘some other problem’.

Supporting our first hypothesis, higher endorsement of physical causes was significantly associated with mental illness labeling ($t = 2.13$, $P < 0.05$, $df = 43$); the mean score on the ‘physical cause’ index was 5.0 ($SD = 1.75$) for those who identified the consumer’s problem as a ‘mental illness’ versus 3.8 ($SD = 1.59$) among those who used indigenous labels. In examining our second hypothesis, there was no significant difference in mean scores for ‘general social causes’ between mental illness (6.5, $SD = 2.49$) and indigenous labeling (6.2, $SD = 2.83$; $t = 0.32$, $P = 0.35$, $df = 43$). However, endorsement of ‘indigenous Chinese beliefs’ ($t = -3.59$, $P < 0.001$, $df = 43$) was negatively and significantly associated with mental illness labeling; the mean score on this index was 4.5 ($SD = 1.53$) for those who identified the consumer’s problem as a ‘mental illness’ versus 6.4 ($SD = 2.03$) among those

who did not. When examining for potential covariates, both duration of illness and relative's employment status were significantly correlated with both the 'indigenous Chinese beliefs' index and mental illness labeling. After entering these covariates simultaneously into a multivariate logistic regression model along with mental illness labeling as the dichotomous outcome variable (0 = indigenous label; 1 = mental illness label), endorsement of 'indigenous Chinese beliefs' remained significant after adjusting for covariates ($B = -0.44$, $Wald(1) = 4.00$, $P < 0.05$).

Discussion

Gross comparisons of the three causal indices indicated that 'general social causes' were endorsed most frequently and considered most important, followed by 'indigenous Chinese beliefs', then 'physical causes'. The emphasis by relatives on social, rather than biological causation, is consistent with prior studies in Chinese samples (Phillips et al. 2000)). Another study of Chinese immigrant caregivers indicated that certain sociodemographic variables (i.e., higher level of acculturation) were correlated with biological causal beliefs for schizophrenia (Kung 2004). We significantly extend this study by identifying specific linkages between causal beliefs and mental illness labeling. Corroborating Kung's report regarding the importance of beliefs of biological causation, we found that causal models emphasizing physical dysfunction were connected with recognition of psychiatric illness. This finding suggests that even though Chinese immigrants tend to view psychiatric disorders as distinct from general physical illnesses (Yang et al. 2009), focus on biological etiological mechanisms by Chinese relatives may predispose accurate identification of mental illness. Recognition of biological processes may indicate receptiveness to anatomical disease processes that facilitates awareness of psychiatric disorders.

Furthermore, while endorsement of 'indigenous Chinese beliefs' relating to an ethnomedical model of illness were negatively associated with mental illness labeling, 'general social causes' were not. While both of these types of beliefs might be thought to lead to non-psychiatric illness labels and use of alternative treatment sources due to their non-biomedical nature (Ajzen and Fishbein 1980), our results suggest a more subtle differentiation in their effects. Although belief in 'general social causes' had been found to be associated with visits to traditional healers among people with schizophrenia in India (Saravanan et al. 2007)), other studies indicated that endorsement of such causal models occurs in the search for possible acute stressors that might explain onset of psychiatric illness (McCabe and Priebe 2004; Saravanan et al. 2008). These offsetting effects might help to explain our findings—that 'general social causes' may be used in an idiosyncratic fashion by relatives and thus, as a whole were not strongly associated with either indigenous or psychiatric labeling.

Another key finding was that 'indigenous Chinese beliefs' were linked to culturally-interpreted 'illness-states' that are perceived to be distinct from psychiatric illness. These results correspond to how cultural perceptions of 'illness', which are shaped by cultural interpretations of distress, are conceptualized differently among caregivers and run counter to a biomedical epistemology of 'diagnosis' or 'disease' (i.e., "abnormalities in the structure and function of body organs and systems", p. 141; Kleinman 1978). Because these indigenous Chinese beliefs are closely connected to socially-shared and constructed 'ethnomedical models' of illness (Kleinman and Benson 2006), this may explain why these causal beliefs in particular are negatively associated with mental illness identification, while 'general social causes'—which lack these culturally constructed frameworks—are not. Further, it is precisely these indigenous causal beliefs that have been found to be most difficult to change. For example, a psychoeducational intervention seeking to promote biomedical knowledge among caregivers of individuals with schizophrenia in India failed to

elicit changes in caregivers' proclivity to seek indigenous treatment for their ill relative (Das et al. 2006). Mismatch in these indigenous causal explanations among families and the biomedical perspectives typically provided by medical professionals thus might be especially important to address to encourage consumer engagement with treatment (Pearson 1993).

Our results have several implications for service development to aid Chinese immigrant relatives more promptly identify their ill member's symptomatology as psychiatric illness and to better adhere to treatment. First, our results indicate that these relatives' causal beliefs should be addressed immediately as a component of treatment, as even after an average of five hospitalizations, 40% of relatives still did not identify psychotic symptoms as mental illness. Such treatment-based psychoeducation might, in addition to emphasizing biomedical models, address the cultural frameworks that situate 'disruptions in thinking', 'spirit possession', and 'effect of past lives' as causal agents for psychotic symptomatology. Rather than seeking to replace indigenous causal beliefs with biological or genetic formulations (Wonpat-Borja et al. in press), it may be more productive to instead supplement existing indigenous models to prompt accurate recognition of mental illness. For example, relatives following psycho-education are able to differentiate between when 'disruption in thinking' crosses over from what the community considers normative behavior to expressions recognized as a form of mental 'illness' (Yang et al. 2010a). Facilitating recognition of these states of sickness via culturally-specific psychoeducation might improve treatment seeking and adherence to optimize remission (Opler et al. 2007; Link et al. 2011).

Secondly, community education programs via "community conversations" planned by health organizations to encourage early identification of mental health problems (Knifton et al. 2010) might productively integrate these Chinese indigenous causal beliefs. As above, use of these culturally-based causal models might illustrate to community members when symptomatic behaviors become extreme enough to warrant psychiatric service use (i.e., presence of enduring delusions, hallucinations, and/or negative symptoms) that are beyond the scope of traditional forms of treatment (e.g., spiritual healers). Because our results indicate that relatives' use of indigenous Chinese beliefs in particular is linked with misinterpretation of psychotic symptoms, addressing these causal models may be a key first step in engaging respondents to discuss mental health related problems and to consider alternate psychiatric interpretations of symptomatology. Enhanced cultural approaches using indigenous cultural constructs have led to increased community awareness and willingness to discuss mental health problems (Knifton et al. 2010). Finally, our results indicate that early identification efforts to reach Chinese immigrants with psychosis should include regular contact with community spiritual healers and traditional Chinese medicine practitioners.

Study limitations include a relatively small sample size and convenience sampling. The cross-sectional design also precludes causal inference between labeling and causal beliefs; it is possible that once a label has been assigned, relatives might revise their causal beliefs in a way that is compatible with the label. However, theorists have emphasized the role of causal beliefs in preceding labeling (Waxler 1974), which then shapes help-seeking, stigma (Yang et al. 2008, 2010b; Yang and Singla 2011), and expectations for prognosis. Another potential limitation is that we operationalized our "labeling" construct with a single item, which did not allow us to assess reliability. Further, this format did not allow for more complex labeling by relatives (i.e., that the problem is both 'mental illness' and 'some other problem'). However, this measure was intended to assess *primary* identification of mental illness among relatives, which is thought to hold key significance for help-seeking. Further, we did find significant differences as predicted with this single-item measure, even though it might not be as reliable as we ideally would like it to be. Further, while our sample was

primarily monolingual and thus we presume to be low-acculturated to U.S. norms, acculturation measures would have allowed for greater specification. Lastly, while illness identification was assessed, how this variable relates with actual consumer adherence with psychiatric treatment might be included in future studies.

Future longitudinal studies with larger samples are required to confirm whether relationships between certain types of causal beliefs predict mental illness identification over time. Nonetheless, our initial findings document the cultural connection between causal beliefs and mental illness labeling in Chinese groups even after immigration. Further, considering the significant barriers to help-seeking that Chinese Americans face and their low participation in mental health research (Chen et al. 2005), we believe that this sample provides an important opportunity to examine factors contributing to treatment use. Another potential area of future inquiry would be to examine how causal beliefs of mental illness relate with relatives' 'expressed emotion', which has been shown to play a pivotal role in illness course (Butzlaff and Hooley 1998). We hope that such targeted psychoeducation might aid Chinese immigrant relatives in more swiftly identifying mental illness, thus enabling rapid response and treatment of psychotic disorders in this at-risk ethnic group.

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