

Cross-National Analysis of Beliefs and Attitude Toward Mental Illness Among Medical Professionals From Five Countries

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Published online: 5 May 2015

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Abstract This quantitative study sought to compare beliefs about the manifestation, causes and treatment of mental illness and attitudes toward people with mental illness among health professionals from five countries: the United States, Brazil, Ghana, Nigeria, and China. A total of 902 health professionals from the five countries were surveyed using a questionnaire addressing attitudes towards people with mental illness and beliefs about the causes of mental illness. Chi-square and analysis of covariance (ANCOVA) were used to compare age and gender of the samples. Confirmatory factor analysis was employed to confirm the structure and fit of the hypothesized model based on data from a previous study that identified four factors: socializing with people with mental illness (socializing), belief that people with mental illness should have normal roles in society (normalizing), non-belief in supernatural causes (witchcraft or curses), and belief in bio-psycho-social causes of mental illness (bio-psycho-social). Analysis of Covariance was used to compare four factor scores across countries adjusting for differences in age and gender. Scores on all four factors were highest among U.S. professionals. The Chinese sample showed lowest score on socializing and normalizing while the Nigerian and Ghanaian samples were lowest on non-belief in supernatural causes of mental illness. Responses from Brazil fell between those of the U.S. and the other countries. Although based on convenience samples of health professional robust differences in attitudes among health professionals between these five

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countries appear to reflect underlying socio-cultural differences affecting attitudes of professionals with the greater evidence of stigmatized attitudes in developing countries.

Keywords Attitudes to mental illness · Stigma · Mental health providers · Cross-cultural research · International comparison

Introduction

Stigma is a widely appreciated challenge in providing mental health services that negatively shapes perceptions of people with psychiatric disorders and arouses pessimism about their treatment. Stigma may significantly impede treatment initiation, continuation, and outcome and may affect the way people with mental illness are treated both by mental health professionals responsible for their care and by society in general, in both the developing and the developed world [1, 2]. Stigma may also have adverse effects on well being [3] even when symptoms are well-controlled [4] and is thought to be associated with reduced access to employment, housing and social relationships [5–7] as well as with painful self-stigmatization [8, 9] and impaired functional capability [10]. Negative and rejecting social attitudes towards people with mental illness may thus have an adverse effect on prevention, early treatment, rehabilitation and quality of life of people affected by mental illness [11]. Stigma may also affect the families of people with mental illness [1, 4, 12].

Health trainees (residents, medical students, psychology and nursing trainees), all of whom are at a formative moment of professional development, and graduate health care providers are especially important targets for study and for possible intervention to address stigma [13, 14] and to foster more progressive, accepting, and positive attitudes toward people with mental illness [15–18]. Findings from some previous studies have shown that mental health providers hold somewhat more positive views than the lay public toward people with mental illness [19–21] or at least similar views [22, 23]. However, in some studies, providers have demonstrated more negative attitudes than the general population [21, 24–26]—an issue of special concern, since they are responsible for both providing care and for educating the larger society about mental illness [27, 28].

While stigmatized attitudes towards people with mental illness are widespread, they may also be shaped by local culture. Mental health providers and the general public within a given culture or nation may share similar stigmatized or positive attitudes toward people with mental illness and such attitudes may also reflect the results of long-standing efforts, such as those made in the United States the United Kingdom, and Canada, to de-stigmatize mental illness and foster more inclusiveness and optimism about outcomes.

Few studies, however, have evaluated cross-national comparisons of such attitudes among health care providers [29, 30]. While impressionistic studies on public beliefs and attitudes concerning mental illness have been conducted in several countries [31–35] we know of no empirical studies that have used a common measure to compare attitudes and beliefs towards mental illness and towards people who are mentally ill across nations.

This study used a questionnaire, developed for several previous single-site studies [36–38] that was based, in part, on materials from the World Psychiatric Association's anti-stigma campaign, to compare attitudes in convenience samples of trainees and graduate health professionals from five countries: The United States, Brazil, Ghana, Nigeria, and China on multiple dimension of attitudes towards people with mental illness, its causes, and its treatment.

Materials and Method

Samples

This exploratory study surveyed convenience samples of health professionals (including trainees in several disciplines, and graduate professionals) from five different countries: The United States, Brazil, Ghana, Nigeria, and China.

The U.S. sample ($n = 107$) consisted of medical professionals, clinical staff including nurses, social workers and psychiatrists from the VA Connecticut Healthcare System (West Haven, Connecticut, U.S.) an affiliate of Yale Medical School. The survey was offered at departmental meetings and seminars and preceded an educational activity that addressed the issue of stigma in different contexts and cultures. Participation in the survey was completely voluntary and anonymous. The U.S. surveys were conducted from April 2013 to March 2014. Individual identifying information was not included into the questionnaire.

The Brazilian sample ($n = 77$) consisted of 5th-year medical students (in a 6 year course of study) from the University of Brazil (Federal University of Rio de Janeiro), a public university and the largest federal university in the country, one with an active research and teaching program in psychiatry. The survey was translated into Portuguese by bi-lingual speakers at the Medical School and back-translated to evaluate its consistency.

The Ghanaian sample ($n = 87$) came from the University of Ghana Medical School College of Health Sciences (Accra, Ghana). The questionnaire was distributed by hand to the entire medical student class prior to the final conference of their psychiatry rotation and collected in person on the day of its distribution. The instrument was used in the original English version as English is the official national language of Ghana. No personal identifiable information was collected.

The Nigeria survey ($n = 345$) was conducted in the summer of 2013 on sample of medical students of the University College Hospital (UCH) and primary care physicians practicing in the city of Ibadan, in Nigeria [38]. In addition to its undergraduate medical program (Based in the College of Medicine of the University of Ibadan), the UCH also provides Postgraduate Residency Training Programs in all medical specialties but has long been a distinctive leader in psychiatric education and research in West Africa [39]. The survey was used in its original English version, as English is the official language of Nigeria.

The Chinese sample ($n = 286$) included medical professionals (psychiatrists and nurses) working at the Guangzhou Psychiatric Hospital in Guangzhou the oldest psychiatric hospital in China and the largest in southern China. The hospital is also the psychiatric teaching facility for the Guangzhou Medical College, Sun Yat-Sen University, and Guangzhou University of Chinese Medicine. The voluntary anonymous survey was distributed in Guangzhou in January, 2012, by hospital administrators to nurses and psychiatrists during the day shift. The questionnaire was originally written in English, translated into Chinese, and then back-translated into English by bilingual specialists. Responses were received from 120 psychiatrists and 162 nurses. Consent to participate in the survey was assumed by the act of completing the questionnaire.

The total sample from all five countries constituted 902 individuals. All studies were approved by of the local Ethics or Institutional Review Board (IRB) at the individual locations, and for the overall comparative study by the IRBs of the VA Connecticut Healthcare system and Yale Medical School. Verbal informed consent was obtained from the participants. No identifying data were collected and thus all analyses were conducted on anonymous data.

Survey

The survey questionnaire was developed to explore attitudes and beliefs toward mental illness and included two parts. The first part consisted of self-reported socio-demographic characteristics (age and gender) and the second part was a modified version of three previously developed attitude scales. The Fear And Behavioral Intentions toward the mentally ill (FABI) questionnaire [40], the Community Attitudes to Mental Illness (CAMI) scale [41], and a modified version of a questionnaire from the Programme to Reduce Stigma and Discrimination [42]. Altogether, it consisted of 43 items with both positive and negative dichotomous wordings and their sub-questions. This instrument has been used in previous studies in Nigeria and formed the basis for several previous publications [36–38]. Negative worded questions were re-coded in positive, direction for the purpose of the final analysis.

Statistical Analysis

First, Chi square tests for gender and analysis of variance for age were used to examine differences in socio-demographic characteristics.

Next, confirmatory factor analysis (CFA) was carried out to validate the construct and confirm the latent structure of the instrument. The structure of the model was specified in advance on the basis of an exploratory factors analysis (EFA) conducted on the first sample surveyed with this measure in Owerri, Nigeria, in 2011 [37]. Missing data were handled by list-wise deletion based on the assumption that data were missing completely at random [43]. Statistics used to evaluate model fit included Chi Square test, the Goodness of Fit Index (GFI), and the Root Mean Square Error of Approximation (RMSEA) estimate [44].

The model tested consists of four factors, each of which is framed in the positive [i.e. more progressive, direction: (1) positive attitudes towards socializing with people with mental illness (socializing); (2) belief that, socially people with mental illness should adopt normalized roles (normalizing); (3) not endorsing witchcraft or curses as causes of mental illness (non-supernatural factor), and (4) belief in bio-psycho-social causation of mental illness (bio-psycho-social model)]. (See individual items in each factor in Iheanacho et al., 2014 [37], Table 1).

The Model parameters and test statistics were calculated using the robust maximum likelihood method, an approach that is relatively insensitive to sample size, the non-normality of distribution, and the number of items in the model [45]. Items were specified to load on a single factor; all factors were allowed to correlate; and all error covariates were set to zero. The multivariate normality assumption was evaluated by checking Mardia's multivariate skewness and kurtosis coefficients [46].

Table 1 Socio-demographic characteristics of the sample, by country

	USA (<i>n</i> = 107)	Brazil (<i>n</i> = 77)	Ghana (<i>n</i> = 87)	Nigeria (<i>n</i> = 345)	China (<i>n</i> = 286)	F/χ^{2*}	<i>p</i>
Age (years)							
Mean (SD)	44.8 (12.1)	23.8 (2.5)	24.5 (2)	27.5 (9)	32 (8.1)	103.8	<.0001
Gender							
Male	34 (32.7 %)	32 (42.7 %)	37 (44.0 %)	120 (34.9 %)	114 (39.9 %)	5.06	0.28

* F/χ^2 -F statistic for Chi square

Examination of data from the Lagrange Test suggested the addition five pairs of correlations between the residuals to improve model fit. Goodness of fit was assessed by the appropriate values of fit indices [$\chi^2(308) = 865, p < .0001, GFI = 0.90$ and $RMSEA = 0.05$], confirming that the previous factor structure fit well to this sample.

Factor scores were calculated by averaging the items that loaded on each factor. Since the individual items were dichotomous, the scores reflected the percentage of responses in the positive direction on each factor. Since the items pertaining to superstitious beliefs about the cause of mental illness were reverse coded, the scores on that factor reflected “non-belief” in superstitious causes of mental illness (the non-supernatural factor), and lower scores thus reflected greater endorsement of superstitious beliefs. Analysis of Covariance (ANCOVA) was then employed to compare current beliefs about mental disorders and attitudes toward mental illness among health professionals in the samples representing each of the five different countries, adjusting for socio-demographic differences (age and gender). Paired comparisons were conducted using t-tests.

All analyses were performed using SAS 9.3 statistical software (SAS Institute Inc., Cary, North Carolina, U.S.). Statistical significance was evaluated at the 0.05 level.

Results

The U.S. sample was the oldest ($M = 44.8; SD = 0.86$), followed by the Chinese ($M = 31.9; SD = 0.5$), Nigerian ($M = 27.5; SD = .45$), Ghanaian ($M = 24.2; SD = 0.98$) and Brazilian samples ($M = 23.8; SD = 0.95$). One-way ANOVA showed a significant main effect for age [$F(1, 869) = 103, p < .0001$] (Table 1). Post-hoc paired comparisons of the five groups indicated that the Ghanaian and Brazilian samples were significantly younger than the U.S., Chinese, and Nigerian samples. Chi square tests on gender showed no significant differences among the groups [$\chi^2(4) = 5, p = 0.28$] (Table 1).

Finally, analysis of covariance using the average item score for each factor and controlling for age and gender were performed on each of four sub-scales to test for differences in attitudes among mental health professionals followed by post hoc paired comparisons. This analysis revealed significant between nation differences on all factors (Table 2).

On the Socializing factor [$F(6856) = 25.8, p < .0001$], participants from the U.S. reported higher scores than those from Brazil, Ghana and China.

On the Normalizing relationships [$F(6856) = 39.1, p < .0001$] data from U.S. professionals, again, showed the highest scores, while responses from Brazil and Nigeria were both higher than scores from Ghana and China.

Analysis of the non-belief in supernatural causes of mental illness factor [$F(6835) = 16.2, p < .0001$] showed the samples from Ghana and Nigeria, the two African countries, scored lower than all others (reflecting greater numbers of positive responses to items reflecting belief in witchcraft or curses as a cause of mental illness).

Finally, on belief in the bio-psycho-social model of mental illness [$F(6857) = 7.5, p < .0001$] professionals from the U.S. scored higher and the sample from China scored lower than all other countries.

In summary, the U.S. sample had higher scores on all the factors. China had the lowest score on all the factors except non-superstitions and both the Nigerian and Ghanaian samples scored the lowest on the non-belief in witchcraft factor (i.e. were more likely to endorse of beliefs in witchcraft and curses as a causes of mental illness).

Table 2 Comparison of national samples of health professionals on mental health attitudes (ANCOVA)

Factors	1-USA (VA) LS mean (SE)	2-Brazil LS mean (SE)	3-Ghana LS mean (SE)	4-Nigeria LS mean (SE)	5-China LS mean (SE)	Paired comparison ($p < .05$)
Socializing	0.96 (0.03)	0.92 (0.03)	0.89 (0.03)	0.8 (0.01)	0.69 (0.01)	1 > 3–5; 2 > 4,5; 3 > 5
Normalizing	0.88 (0.02)	0.79 (0.02)	0.81 (0.02)	0.65 (0.01)	0.62 (0.01)	1 > 2,4–5; 2 > 4,5; 3 > 4,5
Non-supernatural	0.91 (0.04)	0.83 (0.04)	0.58 (0.04)	0.60 (0.02)	0.80 (0.02)	1 > 3–5; 2 > 3–5; 5 > 3,5
Bio-social causes	0.95 (0.02)	0.93 (0.02)	0.94 (0.02)	0.92 (0.01)	0.86 (0.01)	1–4 > 5

Least square means, adjusted for age and gender

Discussion

In this study, we investigated beliefs and attitudes towards mental illness among trainees and health professionals from the United States, Brazil, Ghana, Nigeria, and China. The U.S. sample scored the highest scores in the progressive direction on all four factors and the Chinese sample demonstrated the lowest scores on all factors except non-belief in supernatural causes of mental illness, where professionals from the two African countries scored lowest.

The fact that the U.S. sample of mental health professional exhibited significantly more positive and progressive views on all the factors may reflect the many decades of work to reduce stigma by many advocacy groups in the U.S., the most prominent of which has been the National Alliance on Mental Illness. In addition, the growing “recovery movement” in the U.S., which involves both lay advocates and professionals, has been vocal in its claim that even people with the most serious mental illnesses can recover and live productive lives of their own choosing, fully integrated into mainstream society. The growing consumer self-help and consumer provider movements have also fostered less stigmatized attitudes. At the same time the direct-to-consumer marketing of psychotropic medications, promoted by the pharmaceutical industry, a quite different source of influence, is also likely to have had a de-stigmatizing effect on American society. Drug marketing campaigns have featured biological explanations of mental illnesses, and have featured much admired celebrities who have identified themselves as having experienced mental illness and having benefitted from drug treatment. Whether responses from U.S. professionals are deeply felt personal beliefs, or are merely responses to their awareness of socially desirable attitudes, cannot be determined from these data.

It is perhaps also notable that U.S. mental health providers were more positive about socializing with mentally ill people ($LSMEAN = 0.96$) but somewhat less so about normalizing relationships ($LSMEAN = 0.88$). While they thus express a personal social acceptance, they appear to be less confident of patients’ ability to integrate fully into the life of society. This is consistent with other studies in which mental health professionals have expressed pessimism about the long-term outcomes of their patients [26].

It is possible, at the other pole, that the relatively negative attitudes found among the Chinese professionals reflect the fact that numerous studies have shown that people with mental illness are highly stigmatized in China [47–50]. These results may reflect the more specific fact that the Chinese sample of professionals worked predominantly in inpatient psychiatric hospital settings where the patients are likely to be the more severely ill, generating increasing social distance among providers. As Islam and Hewstone (1993) suggested, the quality of contact with people with mental illness may be more important than the amount of contact, especially when contacts occur on inpatient psychiatric units [51].

The Chinese sample had the lowest scores on the socializing and normalizing factors, which may reflect that, in China, caring for people with mental illness is largely the responsibility of families who are expected to take control of the lives of their relatives with mental illness [52, 53]. On being admitted to the hospital, a patient will experience a virtual loss of control, and the decision to admit is often not the patient’s but their relatives’. Several publications report that patients are not uncommonly admitted to the hospital through deception, ranging from the guise of a family outing, such as a picnic, to being bound with cords and delivered to the hospital [53, 54], a potentially devaluing display, although the recently passed national mental health law that took effect in 2013 is

intended to reduce such conduct. The relatively low status of the mental health workers in China also deserves mention as some authors have indicated that doctors and nurses in China are often reluctant, or stigmatized themselves, for working in the field of psychiatry [53].

Medical professionals from Nigeria and Ghana scored lowest on the non-supernatural causes of mental illness factor, reflecting the fact that they were most likely to endorse items suggesting that witchcraft, possession by evil spirits, or curses can be causes of mental illness. These responses may well reflect the ongoing influence of cultural and magical-religious beliefs in the traditional cultures of these nations, influencing medical professionals [55–57] as they do the general public [58]. Other, more specialized, studies on African beliefs have noted the persistence of superstitious thinking about the etiology of mental illness [34, 36, 58]. Some studies from Western Africa indicate that much of the care for people with mental illness is provided by traditional healers or from evangelical Christian prayer camps, reflecting the deep spiritual orientation of West African cultures [34].

In interpreting the results, several limitations of the present study require comment.

First, the data presented in this study are based on surveys of convenience samples of professionals in limited geographic areas, and at different levels of experience, and thus may not have been broadly representative of health professionals in the five countries. We attempted to adjust for differences in experience by controlling for age in multivariable analyses.

Second, although the factor structure of items previously used in this measure was confirmed [36, 37] adding to its credibility, more validating evidence for the scale is desirable. On the other hand, the items of our questionnaire were previously tested in pilot studies for relevance to mental health providers, and the professionals who have used the survey have found it to be simple and easy to understand.

Third, the items in the questionnaire were phrased so as to inquire in a general way about mental illness. They did not differentiate between diagnoses so as to be accessible to people without technical training. Therefore, it is possible that respondents' attitudes reflect reactions to different interpretations of the meaning of the general phrase "people with mental illness." It is likely that there are differences in attitudes towards different disorders across all cultures. Attitudes towards people with depression or anxiety disorder may be more accepting than those toward schizophrenia or personality disorders [59, 60], which are often regarded as leading to behavior involving violence, antisocial activities, or being "unpredictable".

Fourth, we must acknowledge that the link between attitudes and actual behavior is unknown and very difficult to study. The observations presented here reflect differences in stated attitudes but cannot be taken as evidence of differences in the quality of care delivered, or in professional skills or behavior [61]. This limitation applies to all research into attitudes towards mental illness.

In spite of these limitations, this study demonstrates that, consistent with previous studies [62], negative attitudes are common among health professionals in the developing world. Even among health professionals with similar training in internationally accepted bio-psycho-social approaches, local cultural values seems to influence beliefs and attitudes towards people with mental illness. The influence of the recovery movement and psychopharmacologic marketing emerges in the data from the U.S. culture just as the persistence of traditional beliefs emerges in the data from Ghana and Nigeria [58]. This study thus adds to the limited cross-cultural literature demonstrating the robustness of cultural influence on attitudes towards mental illness [29]. As we become better acquainted with

these attitudes we may come to further understand how to influence them so as to reduce stigma, improve access to and quality of treatment and the quality of life for people with mental illness around the world.

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