

Attitudes and beliefs about mental illness among church-based lay health workers: experience from a prevention of mother-to-child HIV transmission trial in Nigeria

Theddeus Iheanacho^a, Daniel Kapadia^b, Chinenye O. Ezeanolue^c, Alice A. Osuji^d, Amaka G. Ogidi^d, Anulika Ike^d, Dina Patel^{c,e}, Elina Stefanovics^a, Robert Rosenheck^a, Michael Obiefune^{c,d} and Echezona E. Ezeanolue^{c,e*}

^a*Department of Psychiatry, Yale University School of Medicine, New Haven, USA;* ^b*Avalon University School of Medicine, Girard, USA;* ^c*HealthySunrise Foundation, Las Vegas, USA;* ^d*Prevention, Education, Treatment, Training and Research Global Solutions, Enugu, Nigeria;* ^e*University of Nevada School of Medicine, Las Vegas, USA*

(Received 23 February 2015; accepted 15 July 2015)

Common mental disorders are prevalent in Nigeria. Due to stigma and a limited number of trained specialists, only 10% of adults with mental illness in Nigeria receive any care. The Healthy Beginning Initiative is a community-based maternal/child health program that includes screening for perinatal depression and was implemented by lay, volunteer, church-based health advisors (CHAs). The aim of the study was to assess the beliefs and attitudes about mental illness among the CHAs. The study used a cross-sectional survey of 57 CHAs, who completed a 43-item, self-administered questionnaire that assessed their beliefs and attitudes about mental illness. The response rate was 71%. Respondents were mostly female (79%), married (83%) and aged 40–49 years ($M = 41.16$ $SD = 10.48$). Most endorsed possession by evil spirits (84%), traumatic events (81%) and witchcraft (60%) as causes of mental illness. A majority (69%) believed that people with mental illness were a nuisance, and less than half (46%) believed that mental disorders were illnesses like any other illness. It is concluded that stigmatizing attitudes and beliefs about mental illness are common among the CHAs. Training for lay health workers in Nigeria should include education on the known bio-psycho-social basis of mental disorders and the role of social inclusion in recovery.

Keywords: lay health workers; mental illness; stigma; Nigeria; attitudes; beliefs

Introduction

Common mental health disorders like depression and anxiety are as prevalent in low- and middle-income countries as they are in high-income, developed countries (Kessler et al., 2006; Bromet et al., 2011; Gureje, Lasebikan, Kola, & Makanjuola,

*Corresponding author. Email: echezona.ezeanolue@unlv.edu

2006). Depression disproportionately affects women (Bebbington, 1998; Singleton, Bumpstead, O'Brien, Lee, & Meltzer, 2003) and is a significant contributor to maternal morbidity, poor infant health and lost economic opportunities (Adewuya, Ola, Aloba, Mapayi, & Okeniyi, 2008; Patel, Rahman, Jacob, & Hughes, 2004; Rahman, Iqbal, Bunn, Lovel, & Harrington, 2004; Schulz et al., 2000; Tripathy et al., 2010).

In Nigeria, an estimated 10–20% of women experience depression during pregnancy and the postnatal period (Abiodun, 2006; Adewuya, Eegunranti, & Lawal, 2005; Uwakwe, 2003). However, only 10% of adults with any mental health disorder in Nigeria receive any care, irrespective of severity (Gureje & Lasebikan, 2006; Gureje et al., 2006). With only about 150 psychiatrists for a population of more than 160 million people (Kakuma et al., 2011), Nigeria exemplifies the severe lack of capacity for mental healthcare provision seen in low and middle-income countries. Furthermore, among the general population, including healthcare professionals, in Nigeria, stigma and negative attitudes toward people with mental illness are common, and explanatory models of mental illness include strongly held beliefs in the role of witchcraft and evil (Gureje, Lasebikan, Ephraim-Oluwanuga, Olley, & Kola, 2005; Gureje, Olley, Ephraim-Oluwanuga, & Kola, 2006; Iheanacho, Marienfeld, Stefanovics, & Rosenheck, 2014; Iheanacho, Stefanovics, Makanjuola, Marienfeld, & Rosenheck, 2014). These beliefs, stigma and negative attitudes affect help seeking for behavioral and emotional problems and can have effects on health outcomes (Corrigan & Watson, 2002; Schulze, 2007).

Recently, increasing attention has focused on training non-psychiatric health workers and lay people to deliver mental health interventions (van Ginneken et al., 2013). These innovative approaches, which utilize task-sharing, stepped-care approaches, depend on individuals whose knowledge and beliefs about mental illness may conflict with current understanding of treatment options and interventions for mental disorders. The Healthy Beginnings Initiative (HBI) is one such innovative program. The HBI is a congregation-based initiative that utilizes volunteer church-based health advisors (CHAs) and clergy for screening women and their partners for mental health disorders, HIV, hepatitis B, sickle cell and malaria, and linking them to care (Ezeanolue et al., 2013). The CHAs were trained to screen for psychological distress using the 12-item General Health Questionnaire, provide brief psycho-education and refer participants who scored above the cut-off point of 11 to their community health clinics for care and those who had acute psychiatric symptoms to the University of Nigeria Teaching Hospital Psychiatric Unit. Details of this have been published elsewhere (Iheanacho, Obiefune et al., 2014). To our knowledge, no published study has explored attitudes and beliefs about mental illness among church-based health workers in Nigeria. One may assume that the CHA's attitudes and beliefs about mental illness could be influenced by the traditional Igbo ideas of mental illness (Achebe, 1986) or the catholic church's teaching on mental illness (Koenig, 1998) or both. This study aimed to assess the beliefs and attitudes about mental disorders among the CHAs who had no prior psychiatric training and who led the HBI mental health screening and linkage to care (Iheanacho, Obiefune et al., 2014), and to determine differences, if any, in these beliefs and attitudes by factors that shape attitudes and beliefs about mental illness, such as gender, education and rural or urban residence (Wirth & Bodenhausen, 2009; Wrigley, Jackson, Judd, & Komiti, 2005).

Methods

Setting and design

This study is a cross-sectional survey of volunteer CHAs aged 18 years and over who attended a two-day, in-service training as part of the HBI, a large cluster-randomized trial funded by the United States National Institute of Health. The HBI was designed to evaluate the effectiveness of a church-based intervention that uses prayer sessions to recruit pregnant women and their partners early in their pregnancy, utilizes baby shower activities to deliver multiple health interventions (including health education, mental health screening and integrated laboratory testing for HIV, sickle cell genotype and hepatitis B) and baby receptions to follow up with the women and link them to continuing care after delivery (Ezeanolue et al., 2013). Volunteer CHAs were trained to conduct mental health screening and refer women and their partners who were positive for psychological distress to treatment. Details of the CHA's training has been published elsewhere (Iheanacho, Obiefune et al., 2014). Briefly, we recruited and trained over 140 CHAs in churches participating in HBI to administer the 12-item General Health Questionnaire to pregnant women and their partners. The CHAs first received specific training on completing the 12-item General Health Questionnaire (GHQ-12) and translating the questions to the local Ibo language so that they could provide assistance and respond appropriately to participants' inquiries while completing the questionnaire. In addition to providing assistance to the participants in completing the GHQ-12, the CHAs provided education to the families on medical screening, breastfeeding, mother-child bonding, mental health and nutrition.

Participants

For this study, conducted mid-way through HBI implementation, we invited a convenience sample of all 80 CHAs, two from each of the initial 40 churches participating in the HBI, to complete a 43-item, self-administered questionnaire to assess perceptions and attitudes towards mental health disorders and individuals with mental illness. The CHAs were all members of community churches, they spoke English and the local Igbo language fluently. None of the CHAs was a healthcare professional or mental health specialist. We did not ask about personal or family history of mental illness (Table 1 describes the demographics of the study participants).

Measures

The 43-item questionnaire was constructed from modified items taken from the Fear and Behavioral Intentions toward the mentally ill (FABI) questionnaire (Wolff, Pathare, Craig, & Leff, 1996), selected items from the Community Attitudes to Mental Illness (CAMI) scale (Taylor & Dear, 1981) and from a modified version of a questionnaire developed for the World Psychiatric Association Program to Reduce Stigma and Discrimination (World Psychiatric Association, 2000). The questionnaire also documented self-reported sociodemographic characteristics and educational attainment, place of living, place of birth and religious affiliation (Table 1).

The measures addressed: (1) conceptions of the cause of mental illness based on questions developed for the World Psychiatric Association Program to Reduce Stigma and Discrimination because of Schizophrenia, (2) possible treatment options based on the CAMI scale, (3) social distance, with questions derived from the FABI

Table 1. Sociodemographic characteristics of the volunteer church based health advisors ($n = 57$).

Demographics	Mean	<i>SD</i>
Age (years)	41.16 (22–72)	10.48
	<i>N</i>	%
Gender (male)	12	21
Marital status		
Single	8	14
Married	47	83
Widowed	2	3
Residence at birth		
Rural	37	65
Semi-rural	9	16
Urban	11	19
Current residence		
Rural	33	58
Semi-rural	6	11
Urban	16	28
No response	2	3
Religion		
Catholic	40	70
Anglican	16	28
Other	1	2
Employment		
Full-time	34	60
Part-time	10	18
Unemployed	8	14
Education		
Primary	5	9
Secondary	15	26
Tertiary	37	65

questionnaire and, finally, (4) social acceptance and social stigma as assessed by a series of questions based on the CAMI questionnaire. This instrument has been used in previous studies that explored attitudes to mental illness among trainees and healthcare professionals in Nigeria (Ighodaro, Stefanovics, Makanjuola, & Rosenheck, 2015; Iheanacho, Marienfeld et al., 2014; Iheanacho, Stefanovics et al., 2014).

Data collection

Each subject completed the semi-structured self-report questionnaire, which had been distributed by hand to the individuals 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 Nigeria and although participants could speak the local language, majority were unable to read the local Igbo language but can read English. Participation in the survey was completely voluntary and anonymous. The research assistants who handed out the questionnaires were available to answer specific questions from the participants who otherwise completed the questionnaires on their own.

Data analysis

First, chi-square tests for categorical variables and analysis of variance for continuous variables were used to examine differences in sociodemographic characteristics. Then, a chi square test and Fisher's exact test, where appropriate, were used to identify any significant differences in responses among men and women, among two educational levels (primary/secondary versus tertiary) and two different areas of living (rural and urban). All analyses were performed using SAS 9.3 statistical software (SAS Institute Inc., Cary, North Carolina, USA). Statistical significance was evaluated at the 0.05 level. The study was approved by the Institutional Review Board of the University of Nevada, Reno and the Nigerian National Health Research Ethics Committee.

Results

Of the 80 invited CHAs, 57 completed the questionnaire (a response rate of 71%). The majority of the respondents were female (79%), married (83%), aged between 40 and 49 years (mean age 41.16, $SD = 10.48$) and had attained at least a high school education (91%). Most were born in rural areas (65%) and reported living in rural areas (58%) at the time of the survey. The majority reported being in full-time or part-time employment (78%) and 70% were members of the Catholic Church, with 28% reporting membership of the Anglican Church (Table 1).

The survey results show that most of the respondents believed that mental illness is caused by alcohol or drug misuse (97%), brain disease (90%), genetic inheritance (90%), possession by evil spirits (84%), traumatic events (81%) and witchcraft (60%). Most agreed that virtually anyone can become mentally ill (79%) although less than half (46%) believed that mental disorder is an illness like any other. Less than half of the respondents (44%) agreed with the idea that mental hospitals are an outdated means of managing mental illness. Although 69% of the CHAs felt that people with mental illness are a nuisance, more than 95% agreed that the best possible care should be provided for people suffering from mental disorders and less than 5% agreed that increased spending on mental health services is a waste of money (Table 2).

There were some statistically significant differences among respondents on the four domains represented by these questions, as previously described by the authors (Iheanacho, Marienfeld et al., 2014). These domains are: (1) belief in witchcraft, curses and other external supernatural causes of mental illness, (2) personal desire or acceptance of socializing with people with mental illness, (3) favorable attitudes toward normalized activities and relationships for people with mental illness and (4) bio-psychosocial perspectives toward mental illness. On beliefs about causes of mental illness, more men than women endorsed stress as a cause of mental illness (67 versus 32%, $p = 0.03$). Church-based health advisors with tertiary education were significantly more likely to endorse genetic inheritance as a cause of mental illness than those with primary or secondary education (95 versus 71%, $p = 0.01$). Those who lived in rural areas compared to those living in urban areas were more likely to report stress (59 versus 29%, $p = 0.02$) and poverty (50 versus 23%, $p = 0.03$) as causes of mental illness (Table 2). Overall, the vast majority of the respondents interestingly endorsed both the biological and perceived supernatural causes of mental illness.

On measures of acceptance and socialization, CHAs with tertiary education compared to those with primary/secondary education were more unwilling to share a room

Table 2. Differences in beliefs and attitudes by gender, education and area of living.

	Gender			Education			Area of living		
	Male <i>N</i> (%) (<i>n</i> = 12)	Female <i>N</i> (%) (<i>n</i> = 47)	<i>p</i>	Primary/ Secondary <i>N</i> (%) (<i>n</i> = 21)	Tertiary <i>N</i> (%) (<i>n</i> = 38)	<i>p</i>	Rural <i>N</i> (%) (<i>n</i> = 22)	Urban <i>N</i> (%) (<i>n</i> = 35)	<i>p</i>
Cause of mental illness									
Drug /alcohol use	11 (91.7)	44 (93.6)	0.8	18 (85.7)	37 (97.4)	0.08	22 (100)	32 (91.4)	0.16
Evil spirit	11 (91.7)	37 (78.7)	0.3	16 (76.2)	32 (84.2)	0.44	19 (86.4)	27 (77.1)	0.39
Traumatic event	11 (91.7)	35 (74.5)	0.2	16 (76.2)	30 (78.9)	0.8	20 (90.9)	25 (71.45)	0.08
Stress	8 (66.7)	15 (31.9)	0.03	7 (33.3)	16 (42.1)	0.5	13 (59.1)	10 (28.6)	0.02
Genetic inheritance	10 (83.3)	41 (87.2)	0.7	15 (71.4)	36 (94.7)	0.01	21 (95.4)	29 (82.95)	0.15
Physical abuse	4 (33.3)	18 (38.3)	0.7	6 (28.6)	16 (42.1)	0.3	11 (50)	10 (28.6)	0.1
Biological factors	7 (58.3)	33 (70.2)	0.43	12 (57.1)	28 (73.7)	0.19	15 (68.2)	24 (68.6)	0.97
God's punishment	5 (41.7)	25 (53.2)	0.47	10 (47.6)	20 (52.6)	0.71	9 (40.9)	20 (57.1)	0.23
Witchcraft	9 (75)	25 (53.2)	0.17	13 (61.9)	21 (55.7)	0.62	11 (50)	23 (65.7)	0.23
Brain disease	11 (91.7)	40 (85.1)	0.55	16 (76.2)	35 (92.1)	0.08	21 (95.4)	29 (82.8)	0.16
Poverty	5 (41.7)	14 (29.8)	0.43	4 (19.1)	15 (39.5)	0.12	11 (50)	8 (22.9)	0.03
Curse	8 (66.7)	24 (51.1)	0.33	13 (61.9)	19 (50)	0.38	12 (54.5)	19 (54.3)	0.98
People with mental illness									
Can be treated outside the hospital	8 (66.7)	30 (63.8)	0.85	13 (61.9)	25 (65.8)	0.76	16 (72.7)	22 (62.8)	0.44
Tend to be mentally retarded	8 (66.7)	25 (53.2)	0.4	6 (28.6)	27 (71.1)	0.002	14 (63.6)	18 (51.4)	0.36
Are a public nuisance	10 (83.3)	26 (55.3)	0.07	11 (52.4)	25 (65.8)	0.31	17 (77.3)	18 (51.4)	0.05
Can work in regular jobs	3 (25)	7 (14.9)	0.4	4 (19.1)	6 (15.8)	0.75	4 (18.2)	6 (17.1)	0.92
Are dangerous because of violent behavior	10 (83.3)	39 (82.9)	0.97	17 (80.9)	32 (84.2)	0.74	19 (86.4)	29 (82.9)	0.72

In interacting with someone with mental illness, I would be									
Unwilling to share a room	8 (66.7)	32 (68.15)	0.92	10 (47.6)	30 (78.9)	0.01	18 (81.8)	21 (60)	0.08
Would you invite somebody in to your home if you knew they suffered from mental illness	4 (33.3)	21 (44.7)	0.48	5 (23.8)	20 (52.6)	0.03	11 (50)	13 (37.1)	0.34
On social acceptance of someone with mental illness									
A woman would be foolish to marry a man with mental illness even though he seems fully recovered	3 (25.5)	13 (33.3)	0.58	10 (55.6)	6 (18.25)	0.006*	3 (14.3)	11 (39.3)	0.04*
Anyone with mental illness should not be given any responsibility	8 (66.7)	11 (26.8)	0.01	7 (36.8)	12 (35.3)	0.91	10 (47.6)	8 (26.7)	0.12
Virtually anyone can become mentally ill	11 (91.7)	34 (85)	0.34*	17 (94.4)	28 (82.3)	0.18*	21 (100)	23 (79.3)	0.02*
People with mental illness are far less of a danger than most people suppose	11 (91.7)	27 (61.4)	0.03*	10 (52.6)	28 (75.7)	0.05*	15 (71.4)	22 (66.7)	0.22*
The best therapy for mentally ill people is to be a part of a normal community	10 (83.3)	22 (48.9)	0.03*	13 (65)	19 (51.5)	0.14*	14 (63.6)	18 (54.5)	0.18*
Residents have nothing to fear from people coming into their neighborhood to obtain mental health services	7 (58.3)	36 (80)	0.09*	13 (65)	30 (81.1)	0.10*	13 (59)	28 (84.8)	0.02*
Mental hospitals are an outdated means of treating people with mental illness	5 (45.5)	20 (44.5)	0.26*	11 (57.9)	14 (37.8)	0.08*	6 (27.3)	19 (59.4)	0.01*

Note: Results shaded in grey were considered statistically significant when $p < .05$.

*Fisher's exact; DF = 1.

with someone with mental illness (79 versus 48%, $p = 0.01$) but more likely to invite them to their homes (53 versus 24%, $p = 0.03$). On measures of normalization of mental disorders, males were more likely than females to endorse withholding responsibility from people with mental illness (67 versus 27%, $p = 0.01$). On domains that normalize mental illness, CHAs with only a primary or secondary education compared to those with tertiary education were more likely to endorse not marrying people with history of mental illness even if they have recovered (56 versus 18%, $p = 0.006$). Respondents who lived in rural areas were more likely than those in urban areas to believe that virtually anyone can become mentally ill (100 versus 79%, $p = 0.02$). Men were more likely than women to believe that people with mental disorders are not as dangerous as perceived (92 versus 61%, $p = 0.03$) and should be allowed to be part of a normal community (83 versus 49%, $p = 0.03$) (Table 2).

Discussion

Our study findings demonstrated significant stigmatizing beliefs and attitudes among the volunteer health advisors participating in the HBI. It found that a large proportion of the CHAs endorsed culturally accepted models of the causation of mental disorders that lean heavily towards the role of supernatural forces and 'evil' in causation of mental illness. Many scored low on measures of socialization and acceptance of people with mental illness. However, the results also show that most respondents believe that genetic factors, stress and psychoactive drugs and alcohol can contribute to the onset of mental illness. In our view, this result reflects the dual and seemingly contradictory community perception of mental disorders that, on one hand, attributes mental illness to external supernatural forces and, on the other hand, accepts the role familial inheritance and stress play in causation of mental disorders. These dual beliefs are strongly held even among healthcare professionals in Nigeria (Adewuya & Ogunlade, 2007). Our findings are also in keeping with results from survey of other population groups in Nigeria (Adewuya & Makanjuola, 2005; Gureje et al., 2005).

This presents a challenge for Western trained psychiatric specialists and researchers who develop intervention tools based on the commonly accepted biological and psychological constructs of mental illness. Successful implementation of training programs for non-psychiatric specialists in resource-limited, low- and middle-income countries like Nigeria would require understanding and addressing these widely held beliefs about the etiology of mental disorders. It does seem that those with higher education had more bio-psychosocial perspectives about the causes of mental illness, indicating that education plays a role in enhancing understanding about mental disorders. However, there is no clear evidence that belief in witchcraft as a cause of mental illness and belief in bio-psycho-social model of mental illness are incompatible (Legare, Evans, Rosengren, & Harris, 2012). Thus there may be no need to criticize cultural beliefs in order to provide training in bio-psycho-social approaches to care.

It is important, however, to address negative, stigmatizing beliefs and attitudes. This was a quantitative analysis based on a survey instrument that has not been validated in the Nigerian context. A qualitative approach to evaluating the attitudes of the CHAs could possibly be more informative. The authors are currently supplementing the data presented here with a qualitative study of beliefs and attitudes of lay health workers leading the HBI, the church-based prevention program in Enugu, Nigeria. They are also currently designing pilot studies to test the effects of targeted anti-stigma

interventions that can be included in formal training programs for lay health workers in Nigeria.

One limitation of this study is related to the unsystematic sampling procedure. The study population targeted convenience samples of CHAs and thus cannot be assumed to be representative. Another limitation is the small sample size. However, the sample size is adequate for the descriptive objectives of this study as it is not a hypothesis testing study.

In addition, the reliability and validity of the survey instrument used has not been extensively evaluated. However, the instrument has been previously used in pilot studies in Nigeria (Ighodaro et al., 2015; Iheanacho, Marienfeld et al., 2014; Iheanacho, Stefanovics et al., 2014) and found to be relevant, simple and easy to understand, allowing its use in natural settings in which only a brief instrument can be employed. Finally, the questions referred to 'mental illness' as a general category, without delineating specific types of mental health diagnoses. This may reduce the precision with which the survey questions can be interpreted, and attitudes towards people with depression or anxiety disorder would most likely be more positive than those toward schizophrenia or other severe mental illnesses (Kingdon, Vincent, Vincent, Kinoshita, & Turkington, 2008). However, this approach had been established in previous studies of stigma and attitudes to mental illness (Kingdon, Sharma, & Hart, 2004).

Conclusion

Beliefs about supernatural causes of mental illness and stigmatizing, negative attitudes towards people with mental illness were common among the church-based lay health advisors who participated in this study. Training programs for lay health workers in Nigeria should include education on the known bio-psycho-social basis of mental disorders and the role that community and social inclusion play in recovery from mental illness.

Acknowledgements

We are grateful to Bishop John Okoye (Catholic Bishop of Awgu diocese), Arch. Bishop Emmanuel Chukwuma (Anglican Bishop of Enugu), Bishop Callistus Onaga (Catholic Bishop of Enugu) and Arch. Bishop Amos Madu (Anglican Bishop of Oji-River). Their support was instrumental to the successful implementation of HBI. The HBI implementation would not have been possible without the support and tireless effort of the priests in the participating churches. The church-based Volunteer Health Advisors took ownership of the program and made the process of recruitment and implementation smooth for our study team and participants. This study would have been impossible to conduct without the support of PeTR-GS (our PEPFAR-supported partner) staff and volunteers.

Funding

This work was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), the National Institute of Mental Health (NIMH), the President's Emergency Plan for AIDS Relief (PEPFAR) [grant number R01HD075050] to Echezona Ezeanolue, MD. Additional support was provided by HealthySunrise Foundation. The funding agencies played no role in the study conception, design, data collection, data analysis, data interpretation or writing of the report.

Notes on contributors

Dr Theddeus Iheanacho is a Physician and Assistant Professor of Psychiatry and the Medical Director of The Critical Time Intervention Program at the Yale-VA Department of Psychiatry, Yale University School of Medicine. His clinical work is in community psychiatry and his research focuses dissemination of evidence of evidence-based interventions for common mental health disorders and substance use disorders in community settings using task-shifting, task-sharing, collaborative care models.

Daniel Kapadia is a medical student at Avalon University School of Medicine. He is interested in psychiatry and global health.

Chinenye O. Ezeanolue serves as Team Lead for the Montecito Clinic Team at Southwest Medical Associate, a division of United Healthcare (the largest single health carrier in the USA). She is board certified in Internal Medicine and Pediatrics and has >12 years of clinical experience focused on provider-patient interactions and its impact on healthcare quality and outcome.

Alice A. Osuji is a nurse working for PeTR-Global Solutions in Nigeria on HIV prevention and care projects. Her research has focused on improving HIV care in Nigeria.

Amaka G. Ogidi (M.Ed.) is a science educationist with a specialty in biology working as a project coordinator for PeTR-Global Solutions in Nigeria. Her research has focused on identifying effective and innovative approaches to task accomplishment.

Anulika Ike is a project coordinator for PeTR-Global Solutions in Nigeria on the Healthy Beginning Initiative (HBI) program for the prevention of mother-to-child transmission of HIV.

Dina Patel is a Pediatric Nurse Practitioner by training with extensive experience in community-based interventions to promote maternal child health. She has developed and implemented congregation-based interventions that provide health services to people in a local community in Michigan. She currently works for the University of Nevada School of medicine where she provides both clinical and social support to a community of women and children infected/affected by HIV.

Dr Elina Stefanovics is Associate Research Scientist in Psychiatry at the Yale School of Medicine. Her work has covered many psychiatric disorders and healthcare system.

Dr Robert Rosenheck is Professor of Psychiatry, Public Health and at the Child Study Center at Yale Medical School where he is also Director of the Division of Mental Health Services and Outcomes Research in the Department of Psychiatry.

Dr Michael Obiefune is the Executive Director of PeTR-Global Solutions, a local NGO transitioning partner of AIDSRelief Program. He was the Africa Regional Director of the University of Maryland, Institute of Human Virology and Country Director of the AIDSRelief program of the Catholic Relief Services. Dr Obiefune is a pioneer member of the National Anti-Retroviral Technical Working Group for Nigeria. He directed the HIV program implementation strategies necessary for Rapid Expansion in ART for the AIDSRelief program in Nigeria, Rwanda and Tanzania. He helped implement two programs with a budget of over \$75 million that in Nigeria alone have tested over 400,000 people in more than 200 health facilities in 26 states, provided care and treatment to over 300,000 HIV-infected patients and their families with over 120,000 patients currently receiving ART.

Dr Echezona E. Ezeanolue is Associate Professor and Vice-Chair of Pediatrics for Research at the University of Nevada School of Medicine. His interest focuses on the use of implementation science to enhance health outcomes. His research focuses on the use of implementation science and research to enhance the quality of maternal-child health services and reduce health outcome disparity. He was selected by the Institute of Medicine and served as 2010 Robert Wood Johnson

Foundation Health Policy Fellow in the office of the Secretary for Health and Human Services. He has been recognized as Nevada Public Health Leader of the Year (2007), Nevada Health Care Hero (2008), Nevada Immunization Champion (2009) and AAP Local Hero (2010) for his contributions to public health.

References

- Abiodun, O. (2006). Postnatal depression in primary care populations in Nigeria. *General Hospital Psychiatry*, 28(2), 133–136. doi:10.1016/j.genhosppsych.2005.11.002
- Achebe, C. (1986). *The world of the Ogbanije*. Enugu: Fourth Dimension.
- Adeyuya, A. O., Egunranti, A. B., & Lawal, A. M. (2005). Prevalence of postnatal depression in Western Nigerian women: A controlled study. *International Journal of Psychiatry in Clinical Practice*, 9(1), 60–64. doi:10.1080/13651500510018211
- Adeyuya, A. O., & Makanjuola, R. O. (2005). Social distance towards people with mental illness amongst Nigerian university students. *Social Psychiatry and Psychiatric Epidemiology*, 40(11), 865–868. doi:10.1007/s00127-005-0965-3
- Adeyuya, A. O., & Oguntade, A. A. (2007). Doctors' attitude towards people with mental illness in Western Nigeria. *Social Psychiatry and Psychiatric Epidemiology*, 42(11), 931–936. doi:10.1007/s00127-007-0246-4
- Adeyuya, A. O., Ola, B. O., Aloba, O. O., Mapayi, B. M., & Okeniyi, J. A. (2008). Impact of postnatal depression on infants' growth in Nigeria. *Journal of Affective Disorders*, 108(1), 191–193. doi:10.1016/j.jad.2007.09.013
- Bebbington, P. E. (1998). Sex and depression. *Psychological Medicine*, 28(01), 1–8. doi:10.1017/s0033291797006065
- Bromet, E., Andrade, L. H., Hwang, I., Sampson, N. A., Alonso, J., de Girolamo, G., ... Iwata, N. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine*, 9(1), 90. doi:10.1186/1741-7015-9-90
- Corrigan, P. W., & Watson, A. C. (2002). Understanding the impact of stigma on people with mental illness. *World Psychiatry*, 1(1), 16–20. <http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%292051-5545>
- Ezeanolue, E. E., Obiefune, M. C., Yang, W., Obaro, S. K., Ezeanolue, C. O., & Ogedegbe, G. G. (2013). Comparative effectiveness of congregation- versus clinic-based approach to prevention of mother-to-child HIV transmission: Study protocol for a cluster randomized controlled trial. *Implementation Science*, 8(1), 62. doi:10.1186/1748-5908-8-62
- Gureje, O., & Lasebikan, V. O. (2006). Use of mental health services in a developing country. *Social Psychiatry and Psychiatric Epidemiology*, 41(1), 44–49. doi:10.1007/s00127-005-0001-7
- Gureje, O., Lasebikan, V. O., Ephraim-Oluwanuga, O., Olley, B. O., & Kola, L. (2005). Community study of knowledge of and attitude to mental illness in Nigeria. *British Journal of Psychiatry*, 186, 436–441. doi:10.1192/bjp.186.5.436
- Gureje, O., Lasebikan, V. O., Kola, L., & Makanjuola, V. A. (2006). Lifetime and 12-month prevalence of mental disorders in the Nigerian Survey of Mental Health and Well-Being. *British Journal of Psychiatry*, 188(5), 465–471. doi:10.1192/bjp.188.5.465
- Gureje, O., Olley, B. O., Ephraim-Oluwanuga, O., & Kola, L. (2006). Do beliefs about causation influence attitudes to mental illness? *World Psychiatry*, 5(2), 104–107. <http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%292051-5545>
- Ighodaro, A., Stefanovics, E., Makanjuola, V., & Rosenheck, R. (2015). An assessment of attitudes towards people with mental illness among medical students and physicians in Ibadan, Nigeria. *Academic Psychiatry*, 39(3), 280–285. doi:10.1007/s40596-014-0169-9
- Iheanacho, T., Marienfeld, C., Stefanovics, E., & Rosenheck, R. A. (2014). Attitudes toward mental illness and changes associated with a brief educational intervention for medical and nursing students in Nigeria. *Academic Psychiatry*, 38(3), 320–324. doi:10.1007/s40596-014-0073-3
- Iheanacho, T., Obiefune, M., Ezeanolue, C. O., Ogedegbe, G., Nwanyanwu, O. C., Ehiri, J. E., ... Ezeanolue, E. E. (2014). Integrating mental health screening into routine community maternal and child health activity: Experience from prevention of mother-to-child HIV

- transmission (PMTCT) trial in Nigeria. *Social Psychiatry and Psychiatric Epidemiology*, 50 (3), 489–495. doi:10.1007/s00127-014-0952-7
- Iheanacho, T., Stefanovics, E., Makanjuola, V., Marienfeld, C., & Rosenheck, R. (2014). Medical and nursing students' attitudes to people with mental illness in Nigeria: A tale of two teaching hospitals. *International Psychiatry*, 11(2), 3. http://www.rcpsych.ac.uk/pdf/PUB_IPv11n2.pdf
- Kakuma, R., Minas, H., van Ginneken, N., Dal Poz, M. R., Desiraju, K., Morris, J. E., ... Scheffler, R. M. (2011). Human resources for mental health care: Current situation and strategies for action. *Lancet*, 378(9803), 1654–1663. doi:10.1016/s0140-6736(11)61093-3
- Kessler, R. C., Walters, E. E., Aguilar-Gaxiola, S., Andrade, L., Borges, L. G., Caraveo-Anduaga, J. J., ... Wittchen, H. (2006). Cross-national comparisons of co-morbidities between substance use disorders and mental disorders. *Handbook of Drug Abuse Prevention*, 447–472. doi:10.1007/0-387-35408-5_23
- Kingdon, D., Sharma, T., & Hart, D. (2004). What attitudes do psychiatrists hold towards people with mental illness? *Psychiatric Bulletin*, 28(11), 401–406. doi:10.1192/pb.28.11.401
- Kingdon, D., Vincent, S., Vincent, S., Kinoshita, Y., & Turkington, D. (2008). Destigmatising schizophrenia: Does changing terminology reduce negative attitudes? *Psychiatric Bulletin*, 32 (11), 419–422. doi:10.1192/pb.bp.107.018515
- Koenig, H. G. (1998). *Handbook of religion and mental health*. San Diego: Academic Press. doi:10.1016/b978-012417645-4/50025-0
- Legare, C. H., Evans, E. M., Rosengren, K. S., & Harris, P. L. (2012). The coexistence of natural and supernatural explanations across cultures and development. *Child Development*, 83(3), 779–793. doi:10.1111/j.1467-8624.2012.01743.x
- Patel, V., Rahman, A., Jacob, K., & Hughes, M. (2004). Effect of maternal mental health on infant growth in low-income countries: New evidence from South Asia. *British Medical Journal*, 328(7443), 820–823. doi:10.1136/bmj.328.7443.820
- Rahman, A., Iqbal, Z., Bunn, J., Lovel, H., & Harrington, R. (2004). Impact of maternal depression on infant nutritional status and illness: A cohort study. *Archives of General Psychiatry*, 61(9), 946–952. doi:10.1001/archpsyc.61.9.946
- Schulz, R., Beach, S. R., Ives, D. G., Martire, L. M., Ariyo, A. A., & Kop, W. J. (2000). Association between depression and mortality in older adults: The Cardiovascular Health Study. *Archives of Internal Medicine*, 160(12), 1761–1768. doi:10.1001/archinte.160.12.1761
- Schulze, B. (2007). Stigma and mental health professionals: A review of the evidence on an intricate relationship. *International Review of Psychiatry*, 19(2), 137–155. doi:10.1080/09540260701278929
- Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., & Meltzer, H. (2003). Psychiatric morbidity among adults living in private households, 2000. *International Review of Psychiatry*, 15(1–2), 65–73. doi:10.1080/0954026021000045967
- Taylor, S. M., & Dear, M. J. (1981). Scaling community attitudes toward the mentally ill. *Schizophrenia Bulletin*, 7(2), 225–240. doi:10.1093/schbul/7.2.225
- Tripathy, P., Nair, N., Barnett, S., Mahapatra, R., Borghi, J., Rath, S., ... Sinha, R. (2010). Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: A cluster-randomised controlled trial. *Lancet*, 375(9721), 1182–1192. doi:10.1016/S0140-6736(09)62042-0
- Uwakwe, R. (2003). Affective (depressive) morbidity in puerperal Nigerian women: Validation of the Edinburgh Postnatal Depression Scale. *Acta Psychiatrica Scandinavica*, 107(4), 251–259. doi:10.1034/j.1600-0447.2003.02477.x
- van Ginneken, N., Tharyan, P., Lewin, S., Rao, G. N., Meera, S., Pian, J., ... Patel, V. (2013). Non-specialist health worker interventions for the care of mental, neurological and substance-abuse disorders in low-and middle-income countries. *Cochrane Database Syst Rev*, 11, CD009149. doi:10.1002/14651858.cd009149.pub2
- Wirth, J. H., & Bodenhausen, G. V. (2009). The role of gender in mental-illness stigma: A national experiment. *Psychological Science*, 20(2), 169–173. doi:10.1111/j.1467-9280.2009.02282.x
- Wolff, G., Pathare, S., Craig, T., & Leff, J. (1996). Community knowledge of mental illness and reaction to mentally ill people. *British Journal of Psychiatry*, 168(2), 191–198. doi:10.1192/bjp.168.2.191

- World Psychiatric Association. (2000). *The WPA programme to reduce the stigma and discrimination because of schizophrenia*. Retrieved from http://www.open-the-doors.com/english/media/Training_8.15.05.pdf
- Wrigley, S., Jackson, H., Judd, F., & Komiti, A. (2005). Role of stigma and attitudes toward help-seeking from a general practitioner for mental health problems in a rural town. *Australian and New Zealand Journal of Psychiatry*, 39(6), 514–521. doi:10.1111/j.1440-1614.2005.01612.x