



The Effect of Clinical Psychiatric Training on Medical Students' Belief and Attitude towards People with Mental Illness

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ABSTRACT

Background to the study: Medical student's attitude towards people with mental illness (PWMI) is very important for the future care of psychiatric patients. It has been postulated that psychiatric education could lead to a reduction in negative attitude towards PWMI.

Objective: To assess the effect of clinical psychiatric training on medical student's belief and attitudes towards PWMI

Methods: A pre-posttest design study carried out among final year medical students of the University of Benin, Nigeria. One hundred and seventy one medical students and randomly selected 55 students of biochemistry, who served as controls, participated in the study. A modified version of the questionnaire developed for the World psychiatric Association program to reduce stigma and discrimination because of Schizophrenia was used to collect data. Some socio-demographic information was also obtained. Data were analyzed using the 16th version of SPSS; level of significance was set at 0.05

Results: Majority (95.9%) of the pre-training subjects (P1) and control group (85.5%) had good knowledge of genetic causes of mental illness. However substantial proportions of P1 (65.5%) and control group (81.8%) believed in spiritual causation of mental illness. Among post-training subjects (P2), there was a significant shift in favour of more accurate belief about causes of mental illness. Although majority of P1 and controls (78.4% and 83.6% respectively) believed that PWMI can be treated outside the hospital, this belief co-existed with discriminatory views such as, being dangerous and being nuisance to the public. Among P2, views were largely less discriminatory on all items. Large percentages of P1 and control (80.79% and 98.27% respectively) believed that PWMI can be treated and be normal again but a substantial proportion of them did not believe that orthodox medical care is the best form of treatment. Majority (85.8%) of P2, however, believed that orthodox care is the best form of care. Larger percentage of P2 (90.0%) than P1 (60.2%) would be able to maintain friendship with PWMI (P= 0.00). Overall, P2 expressed more tolerant attitudes than P1 and control groups. Male and female respondents did not differ significantly on any of the items that assessed their attitudes towards PWMI (P= 0.07, 0.52, 0.26)

Conclusion: Negative views and attitudes towards PWMI were found among our sample of medical students before exposure to psychiatric training. The eight weeks of clinical psychiatric training considerably altered this, as it positively influenced their knowledge, belief, views and attitudes towards PWMI. In order to enhance and sustain this trend a periodic review of the psychiatric training curriculum to accommodate adequate exposure of the students to PWMI is advocated.

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INTRODUCTION

Research findings across various cultures of the world have left nobody in doubt concerning the universality of harmful beliefs and subsequent negative attitude towards persons with mental illness (PWMI).¹⁻⁴ African societies have a peculiar attitude towards PWMI and this is evident in the

rejection, scornful disposition and negative attitude towards them.⁵ In Nigeria, a few studies have shown that negative attitude towards PWMI are prevalent and they are socially stigmatized even after they have been adequately treated.^{5,6}

More worrisome is the finding that negative attitudes towards PWMI might exist within the

medical environment,⁷ for example, it has been found that health workers of different cadres, doctors and even psychiatrists also exhibit negative attitudes towards the mentally ill patients.^{8,9}

This is contrary to expectation and suggestions that those who are more knowledgeable about mental illness and who interact with PWMI are less likely to exhibit negative attitudes.¹⁰

Studies have shown that medical students also exhibit negative attitudes towards the mentally ill,¹¹ and this phenomenon is widespread as suggested by studies conducted among medical students in Africa¹², Asia¹³ and Europe.¹⁴ Medical students are tomorrow's doctors and their attitudes towards PWMI are very important because of the implication for the future care of psychiatric patients. No doubt, medical students' attitudes are key factors in determining their willingness to deal with mentally ill patients, even in general practice.

Stigma and negative attitudes towards the mentally ill lead to strained social interaction, low self-esteem, loss of employment and income, and increased probability of alcohol and drug abuse.¹⁵ Negative attitude among health professionals – medical students and doctors can prevent PWMI from seeking help and result in compromised care.¹⁶

The importance of intervention aimed at modifying negative attitudes towards PWMI cannot be over emphasized. It has been suggested that medical education is a major component of attitude change in mental health care.¹⁷ Many studies have reported that attitudes towards PWMI have become more favourable with clinical exposure during psychiatric training of medical students.^{18,19}

As part of the undergraduate medical curriculum at the University of Benin, School of Medicine, medical students in their 600 level of training undergo an 8-week training in mental health/psychiatry during which they receive didactic lectures and also have contact with patients in clinical settings. After their psychiatric exposure, medical students are expected to have more accurate knowledge about mental illness and cultivate favourable attitude towards PWMI. To what extent does this training modify their perception about

mental illness and attitude towards PWMI? This study seeks to examine this influence.

Medical students are tomorrow's doctors, assessing their attitudes towards the mentally ill, as well as the effect of their psychiatric training on these attitudes is considered crucial. However, very few studies have examined this impact in this environment. Thus, there is paucity of information on the impact of exposure to psychiatric training on the attitude of tomorrow's doctors.

The aim of this study is to assess the effect of clinical psychiatric training on the knowledge and belief of medical students about mental illness and their attitude towards the mentally ill by comparing students' belief and attitude before their training (P1) with their belief and attitude after training (P2).

MATERIALS AND METHOD

This study was descriptive and pre-posttest in design, carried out in the School of Medicine, College of Medical Sciences, University of Benin, Nigeria. The College provides training for medical and dental students, as well as students in the basic medical courses. The study was carried out among 600 level medical students, who were at the final year of their medical training but never had any training in psychiatry nor exposure to psychiatric patients prior to their final year.

At this level, medical students undergo an 8-week training in psychiatry which consisted of lecture-based teaching of theoretical psychiatry, clinical training in the outpatient clinic and psychiatric ward, case demonstrations and clinical seminars. All the trainings were simultaneous.

The clinical aspect of their training substantially exposed them to psychiatric patients. As at the time of this study, 2012/2013 academic session, there were 177 students in 600 level. The inclusion criteria were: 1) being in 600 level which qualifies the student for the 8-week training; 2) lack of previous exposure to psychiatry; and 3) willingness to participate in the study. All the 177 students met the inclusion criteria and in order to ensure fairly large sample size they were all recruited into the study, thus the entire 600 level class constituted the study population. Randomly selected final year students

of Biochemistry acted as controls. Unlike the medical students, the Biochemistry students had no exposure to psychiatric training. First the study sought to compare the belief/attitude of medical students before their training in psychiatry (P1) with that of non-medical (biochemistry) students (control group), and secondly compare the belief/attitude of the medical students pre and post psychiatric training (P1 and P2).

The questionnaire for the study consisted of a modified version of the questionnaire developed for the World Psychiatric Association programme to reduce stigma and discrimination because of schizophrenia.^{20,21}

The original questionnaire focused mainly on knowledge and attitude to schizophrenia (a diagnostic category of mental illness) but was modified by Gureje and his colleagues, largely to focus on mental illness rather than schizophrenia.²⁰ Subsequently, they used the questionnaire in a study of knowledge and attitude to mental illness in the local environment.²⁰ This modified version was adapted for this study; the questionnaire is self administered and made up of four sections as follows:

Section 1: consists of 10 items that elicit information on respondent's belief about commonly reported causes of mental illness.

Section 2: information on respondent's view of PWMI (five items).

Section 3: Knowledge of treatment/rehabilitation of PWMI (eight items).

Section 4: Attitude towards PWMI (six items)

Respondents gave "yes" or "no" responses to each statement in all the four sections. Some socio-demographic data of the respondents were also obtained.

Data were collected, first at the beginning of the medical students training in psychiatry by administering the questionnaires to students during lectures over the first week of the commencement of training. All of the 177 medical students completed the questionnaires accurately (P1). A systematic random technique aimed at selecting

equal number of willing control participants was adopted among final-year (400 level) biochemistry students during a lecture; only 55 of them accurately completed and returned the questionnaires (control group). A second data collection was done among the medical students on the last day of the 8-week training using the same instrument.

One hundred and sixty one students present during a revision class filled and returned the questionnaires (P2). The focus of the study post intervention was to compare the belief/attitude of P1 and P2 hence the tool was administered to only P2 post intervention.

The study was approved by the ethics and research committee of the University of Benin Teaching Hospital, Benin City. Verbal informed consent was obtained from the potential participants who were told that participation was voluntary and had no effect on their evaluation score at the end of their training neither would non participation attract any consequence. Confidentiality was guaranteed on the information obtained from the subjects.

The questionnaires retrieved were checked for correctness and analyzed using the 16th version of SPSS software package. Percentages were obtained; cross tabulation and chi-square statistical tests were carried out to compare the respondents' responses and the level of significance was set at $P < 0.05$ which corresponds to the confidence level of 95%.

RESULTS

The mean age of the study group was 26.5 ± 3.4 years, while the mean age of control group was 25.3 ± 4.5 years. About sixty six (66.1%) of the study group were males while 64.4% of the control group were males. Majority of the participants (35.5%) were of Bini ethnic nationality, Ibo (22.0%), Esan (13.6%), Urhobo (11.0%), Yoruba (6.8%), Etsako (5.2%) and others (6.2%).

Belief about commonly reported causes of mental illness (Table I)

There was a close match in the proportions of pre-training subjects (P1) and controls who believed that; drug/alcohol abuse (98.2%, 98.1% respectively); trauma events (94.1%, 96.3%

respectively); physical abuse (79.5%, 76.4% respectively), biological factors (79.5%, 80.0% respectively) are causes of mental illness. There was no statistically significant difference in the knowledge of P1 and control regarding the role of these factors in the aetiology of mental illness.

Majority of P1 (65.5%) and a significantly higher majority of control (81.8%) endorsed evil spirit as a cause of mental illness ($p = 0.020$). Also, 34.5% of P1 as against 43.6% of control believed that God's punishment is a cause of mental illness. Among post training subjects(P2), drug/alcohol, genetic and biological causes were mostly endorsed (100.0%, 98.8% and 98.8% respectively) and, compared to P1, the proportions who endorsed evil spirit and God's punishment significantly reduced to 34.8% ($p=0.01$) and 20.5% ($p<0.001$) respectively.

Respondents' view of PWMI (Table II)

Majority of P1 as well as control believed that PWMI: can be treated outside the hospital (63.7%, 69.0% respectively), but are dangerous because of violent behavior (78.4%, 83.6% respectively). Also 24.6% of P1 as against 36.4% of control held the view that all PWMI are nuisance to the public. Similarly, a disproportionate 37.4% of P1 and 81.8% of control believed that PWMI tend to be retarded. The differences were not significant on any of the items. However, following sychiatric training, compare to P1, there was a statistically significant reduction in the proportions of P2 who believed that PWMI are: dangerous (47.2%, $p<0.001$), nuisance to the public (3.7%, $p<0.001$) and retarded (19.9%, $p<0.001$).

Table I: Commonly Reported Causes of Mental Illness

Causes	Pre-Training	Control	Significance			Pre-Training	Post-Training	Significance		
	n = 171	n = 55	c ₂	Df	p	n = 171	n = 161	c ₂	df	p
Drug or alcohol misuse	Yes 168(98.2)	54(98.1)	0.00	1	0.98	168(98.2)	161(100.0)	2.85	1	0.09
	No 3(1.8)	1(1.9)				3(1.8)	0(0.0)			
Evil spirit	Yes 112(65.5)	45(81.8)	5.23	1	0.02	112(65.5)	56(34.8)	31.30	1	0.01
	No 59(34.5)	10(18.2)				59(34.5)	105(65.2)			
Trauma events	Yes 161(94.1)	53(96.3)	0.41	1	0.53	161(94.1)	159(98.8)	5.05	1	0.03
	No 10(5.9)	2(3.7)				10(5.9)	2(1.2)			
Stress	Yes 154(90.0)	45(81.8)	2.69	1	0.10	154(90.0)	160(99.4)	14.05	1	0.01
	No 17(10.0)	10(18.2)				17(10.0)	1(0.6)			
Genetic/familiarity	Yes 164(95.9)	47(85.5)	7.34	1	0.01	164(95.9)	159(98.8)	2.56	1	0.11
	No 7(4.1)	8(14.5)				7(4.1)	2(1.2)			
Physical Abuse	Yes 136(79.5)	42(76.4)	0.25	1	0.62	136(79.5)	153(89.5)	17.67	1	0.01
	No 35(20.5)	13(23.6)				35(20.5)	8(10.5)			
God's Punishment	Yes 59(34.5)	24(43.6)	1.49	1	0.22	59(34.5)	33(20.5)	8.12	1	0.02
	No 112(65.5)	31(56.4)				112(65.5)	128(79.5)			
Brain Diseases	Yes 166(97.0)	55(100.0)	1.65	1	0.20	166(97.0)	160(99.4)	2.49	1	0.12
	No 5(3.0)	0(0.0)				5(3.0)	1(0.6)			
Biological Factors	Yes 136(79.5)	44(80.0)	0.01	1	0.94	136(79.5)	159(98.8)	30.95	1	0.00
	No 35(20.5)	11(20.0)				35(20.5)	2(1.2)			
Poverty	Yes 85(49.7)	22(40.0)	1.57	1	0.21	85(49.7)	105(65.2)	8.15	1	0.02
	No 86(50.3)	33(60.0)				86(50.3)	56(34.8)			

Table II: Respondents' view of people with Mental Illness

Causes	Pre-Training	Control	Significance			Pre-Training	Post-Training	Significance		
	n = 171	n = 55	c ₂	df	p	n = 171	n = 161	c ₂	df	p
They can be treated outside the hospital	Yes 109(63.7)	38(69.0)	0.52	1	0.47	109(63.7)	122(75.7)	5.67	1	0.02
	No 62(36.3)	17(31.0)				62(36.3)	39(24.3)			
They tend to be retarded	Yes 64(37.4)	45(81.8)	32.84	1	0.00	64(37.4)	32(19.9)	12.43	1	0.00
	No 107(62.6)	10(18.2)				107(62.6)	129(80.1)			
They are all nuisance to the public	Yes 42(24.6)	20(36.4)	2.91	1	0.08	42(24.6)	6(3.7)	29.11	1	0.00
	No 129(75.4)	35(63.6)				129(75.4)	155(96.3)			
They are all dangerous because of violent behavior	Yes 134(78.4)	46(83.6)	0.71	1	0.39	134(78.4)	76(47.2)	34.64	1	0.00
	No 37(21.6)	9(16.4)				37(21.6)	85(52.8)			
They can work in a regular job	Yes 102(59.6)	16(29.1)	15.58	1	0.00	102(92.6)	144(89.4)	38.35	1	0.00
	No 69(40.4)	39(70.9)				69(7.4)	17(10.6)			

Table III: Respondents' Belief about Treatment /rehabilitation of people with Mental Illness

Causes	Pre-Training	Control	Significance			Pre-Training	Post-Training	Significance		
	n = 171	n = 55	χ ²	df	p	n = 171	n = 161	c ₂	df	p
They can be treated and normal again	Yes 138(80.7)	54(98.2)	9.95	1	0.00	138(80.7)	153(56.1)	15.73	1	0.00
	No 33(19.3)	1(1.8)				33(19.3)	8(4.9)			
Orthodox care is the best treatment	Yes 99(57.8)	31(56.4)	0.04	1	0.84	99(57.8)	138(85.8)	31.42	1	0.00
	No 72(42.2)	24(43.6)				72(42.2)	23(14.2)			
They institutionalized them when taken to psychiatric hospital	Yes 65(38.1)	39(70.9)	18.13	1	0.00	65(38.1)	31(19.2)	14.19	1	0.00
	No 106(61.9)	16(29.1)				106(61.9)	130(80.8)			
They are best treated at home	Yes 13(7.6)	4(7.2)	0.01	1	0.94	13(7.6)	3(1.8)	5.95	1	0.02
	No 158(93.4)	51(92.8)				158(92.4)	158(98.2)			
They require to be tied or locked up	Yes 34(19.8)	9(16.4)	0.34	1	0.56	34(19.8)	2(1.2)	29.81	1	0.00
	No 137(80.2)	46(83.6)				137(80.2)	159(98.8)			
Recovered person cannot marry	Yes 16(9.4)	2(3.6)	1.86	1	0.17	16(9.4)	3(1.8)	8.63	1	0.00
	No 155(90.6)	53(96.4)				155(90.6)	158(98.2)			
Recovered person should be employable	Yes 126(73.6)	42(76.4)	0.16	1	0.69	126(73.6)	142(88.2)	11.23	1	0.00
	No 45(26.4)	13(23.6)				45(26.4)	19(11.8)			
They should be kept away not to harm others	Yes 88(51.4)	33(60.0)	1.22	1	0.27	88(51.4)	27(16.8)	44.08	1	0.00
	No 83(48.6)	22(40.0)				83(48.6)	134(83.2)			

Respondents' belief about treatment/ rehabilitation of PWMI (Table III)

Majority of P1, as well as controls believed that PWMI can be treated and be normal again (80.7%, 98.2% respectively); and that recovered persons should be employable (73.6%, 76.4% respectively). About half of P1 and control (57.8%, 56.4% respectively) believed that orthodox care is the best treatment. The differences on these items were not statistically significant. A minority of P1 as well as controls believed that PWMI require to be tied or locked up (19.8%, 16.4% respectively); cannot marry when they recover (9.4%, 3.6% respectively). No statistically significant differences on any of these items. A significantly higher proportion of P2 than P1 believed that: orthodox care is the best treatment (85.8%, 57.8% respectively; $p = 0.001$), and recovered persons should be employable (88.2%, 73.6% respectively, ($p < 0.001$)). Compared to P1, there was a statistically significant reduction in the proportion of P2 who believed that PWMI require to be tied or locked up (19.8%, 1.2% respectively; $p = 0.001$); recovered person cannot marry (9.4%, 1.8% respectively; $p < 0.001$).

Respondents' attitude towards PWMI (Table IV)

Higher proportion of control group than P1 were afraid to have a conversation with PWMI (54.6%, 41.4% respectively); and would be upset or disturbed working with PWMI (69.1%, 56.7% respectively). Forty five percent of P1 and 43.6% of control group would be ashamed to be identified with PWMI. Only a minority of P1 (4.1%) and control (3.6%) would be prepared to marry PWMI. The differences were not statistically significant on any of the items. Compared to P1, there was a significant reduction in the proportion of P2 who would be: afraid to have a conversation with PWMI (40.4%, 5.0% respectively; $P < 0.001$), upset or disturbed working with PWMI (56.7%, 33.0% respectively; $p < 0.001$); ashamed to be identified with PWMI (45.0%, 18.6%; $p < 0.001$). Majority of P2 (90.0%) as against P1 (60.2%) would be able to maintain a friendship with PWMI ($p < 0.001$). While only 4.1% of P1 would be prepared to be married to PWMI, 11.8% of P2 would be prepared to do so ($p = 0.01$).spectively; $p = 0.001$); should be kept away not to harm others (51.4%, 16.8% respectively; $p < 0.001$).

Table IV: Respondents' Attitude towards people with Mental Illness

Causes	Pre-Training		Significance			Post-Training		Significance		
	n = 171	Control n = 55	χ^2	df	P	n = 171	n = 161	χ^2	df	P
Afraid to have a conversation with PWMI	Yes 69(4.0)	30(54.6)	3.41	1	0.07	69(40.4)	8(5.0)	58.28	1	0.00
	No 102(59.6)	25(45.4)				102(59.6)	153(95.0)			
PWMI upset or disturbed about working with PWMI	Yes 97(56.7)	38(69.1)	2.65	1	0.10	97(56.7)	53(33.0)	18.97	1	0.00
	No 74(43.3)	17(30.9)				74(43.3)	108(67.0)			
Able to maintain a friendship with PWMI	Yes 103(60.2)	21(38.2)	8.17	1	0.00	103(60.2)	145(90.0)	39.04	1	0.00
	No 68(39.8)	34(61.8)				68(39.8)	16(10.0)			
Unwilling to share a room with PWMI	Yes 118(69.0)	34(61.8)	0.98	1	0.32	118(69.0)	78(48.0)	14.49	1	0.00
	No 53(31.0)	21(38.2)				53(31.0)	83(52.0)			
Ashamed to be identified with PWMI	Yes 77(45.0)	24(43.6)	0.03	1	0.86	77(45.0)	30(18.6)	26.45	1	0.00
	No 94(55.0)	31(56.4)				94(55.0)	131(81.4)			
Prepared to be married to PWMI	Yes 7(4.1)	2(3.6)	0.02	1	0.88	7(4.1)	19(11.8)	6.83	1	0.01
	No 164(95.9)	53(96.4)				164(95.9)	142(88.2)			

Table V: Gender difference in respondents' attitude towards people with mental illness (P2)

Attitude	Sex		Significance		
	Male n = 113	Female n = 58	χ^2	df	P
Afraid to have a conversation with PWMI	Yes	40(45.4)	3.40	1	0.07
	No	73(64.6)			
Upset or disturbed about working with PWMI	Yes	62(54.9)	0.47	1	0.49
	No	51(45.1)			
Able to maintain a friendship with PWMI	Yes	70(61.9)	0.41	1	0.52
	No	43(38.1)			
Unwilling to share a room with PWMI	Yes	75(66.4)	1.08	1	0.29
	No	38(33.6)			
Ashamed to be identified with PWMI	Yes	48(42.5)	0.88	1	0.35
	No	65(57.5)			
Prepared to be married to PWMI	Yes	6(5.3)	1.26	1	0.26
	No	107(94.6)			

DISCUSSION

Belief about commonly reported causes of mental illness

Accurate belief about the causation of an illness determines, to a large extent, the approach to treatment and how appropriately and effectively the illness would be treated. Medical students are the future medical doctors who will, sometimes in the course of their practice as doctors, be involved in the management of psychiatric patients, either as psychiatrists, family physicians or general practitioners in general hospital settings. Thus, it is imperative that they have accurate belief about possible causes of mental illness.

In this study, large percentage of the subjects, even before exposure to psychiatric training (P1) had accurate belief of causation of mental illness. Similarly, large percentage of the controls (supposed lay respondents) also had accurate belief of possible causes of mental illness. These findings contradict previous report that belief about causes of mental illness was grossly inaccurate in Nigerian

communities.²⁰ The previous study was community based, while our study was among university students. Although university students are an extension of the community with similar ethno-cultural orientation, their educational level could have contributed to a better knowledge and belief of mental illness; more so, the general medical education of the medical students, even though they were yet to be exposed to psychiatric training, could further enhance their belief. A more accurate belief of the causation of mental illness was demonstrated by the post training subjects (P2).

Large proportions of the control group (98.1%); P1 (98.1%); and P2 (100.0%) believed that drug and alcohol misuse cause mental illness. This wide spread belief is good, as it might deter them from the use of psychoactive substances, and strengthen the campaign against substance abuse. However, as noted by Gureje and his Colleagues, this belief may translate to a notion of mental illness as being self inflicted, and this may lead to unsympathetic attitude towards PWMI.²⁰ Majority of P1 and Controls (65.5%, 81.8% respectively) attributed mental illness to evil spirit. Although this belief was held by a significantly reduced proportion of P2, it is worthy of note that as much as 34.8% of them (P2) still held this belief despite their exposure to psychiatric training. Similarly more than one-third of P1 and controls, as well as a minority of P2 believed that God's punishment was a cause of mental illness. These findings are consistent with reports from previous studies among medical students and doctors in Nigeria,^{10,22} and doctors in Malawi;²³ and have supported the observation that individuals in sub-Saharan Africa most commonly attribute mental illness to spiritual causation.^{20,23} The fact that medical students and doctors, despite their medical knowledge, share in the supernatural causation of mental illness, attests to the culturally enshrined nature of this belief and it is, perhaps, pervasive irrespective of educational attainment. Consequent upon this belief, traditional and spiritual healing may be perceived as being superior to orthodox medical care; a notion that could have far reaching implication for help seeking behaviour and treatment of psychiatric patients.

Although the majority of P1 and, to a lesser extent, controls had accurate belief about biological/genetic causation of mental illness, this belief was further enhanced among P2 following psychiatric training. Thus, our sample of medical students' opinion about the causation of mental illness is, to a large extent, compatible with scientific evidence and this finding is consistent with the finding among medical students in Malaysia.²⁴

Views about mental illness

It is worthy of note that majority of P1 (63.7%), and controls (69.0%) were aware that persons with mental illness can be treated outside the hospital. These findings seem like an improvement over the findings among medical students in Lagos, Nigeria in a previous study where only a minority of subjects (32.3%), and controls (10.5%) believed that PWMI can be treated outside the hospital.²² In this study, the proportion of P2 (75.7%) who held this belief was elevated, and this probably reflects the effect of their training. The belief that the mentally ill can be treated outside the hospital has a positive implication for the practice of community psychiatry in Nigeria. Community based care is in line with the concept of de-institutionalization²² which is especially necessitated in Nigeria by the inadequate facilities and professionals for hospital based care of PWMI.²² However, even though majority of our respondents endorsed treatment of PWMI outside the hospital, it is worrisome that this view co-existed (especially among P1 and control) with the belief that the mentally ill are dangerous, and are nuisance to the public. Similar views were expressed by a sample of Nigerian doctors in a previous study.¹⁰ Such negative views have been found to be responsible for community resentment of PWMI²⁵ and can engender low tolerance. This is perhaps a setback for community care especially when such views are shared by medical students/doctors who are supposed to be at the fore front of the quest to make mental health service largely community based. However, it is reassuring to find that only a minority of subjects held these negative beliefs after the psychiatric training (P2). Our finding is similar to the report of a study among medical students in Malaysia and supports the

suggestion that knowledge seems to have the effect of inculcating greater tolerance of mental illness.²⁴

Belief about treatment/rehabilitation of PWMI

Although majority of P1 and control believed that PWMI can be treated and become normal again, only about half of them believed that orthodox care is the best treatment, suggesting that a substantial proportion believed more in the efficacy of alternative forms of treatment. These findings are similar to reports from previous studies among medical students in Nigeria²⁶, and Australia.¹⁴ Also, in New Guinea, most students believed that mental illness could be treated by prayer and about one in five believed in the efficacy of traditional healers.¹² Perhaps, it is not surprising that many students did not see orthodox treatment as the best form of treatment, considering the fact that large proportions of them (especially P1 and controls) attributed mental illness to evil spirit. Our findings are different from the reports from Lagos²² and Pakistan²⁷ where large percentages of medical students and control believed that orthodox psychiatric care is the best form of treatment. However, following psychiatric training, majority (85.8%) of our subjects (P2) believed that orthodox care is the best form of treatment. Similarly, following psychiatric exposure, a sample of medical students in Nottingham were found to have greater appreciation of the therapeutic potential of orthodox psychiatric intervention.¹⁷ These findings among P2 are reassuring because those who will have the responsibility of treating the mentally ill must, themselves, believe in the therapeutic efficacy of orthodox care. Regarding rehabilitation, it is remarkable that even before training, majority of P1, (and controls alike) believed that recovered persons should be married and be employable. This belief was further enhanced among post training subjects, with virtually all of them believing that recovered persons should be married, be employable and, not be kept away. Overall, post training subjects expressed a more accurate knowledge of treatment and more positive views in favour of rehabilitation. These findings are reassuring and in keeping with previous reports.^{27,22}

Rehabilitation is a crucial component of care in psychiatry with overall aim of social integration, gainful employment and improved quality of life.²² This underscores the need to further emphasize psychiatric rehabilitation in the curriculum of our medical education.

Respondents' attitude towards PWMI

It is worrisome that large percentages of P1 and control would be afraid to have a conversation and unwilling to share a room with, and unprepared to be married to PWMI. All of these findings suggest the degree of social distance and discrimination our respondents might have against PWMI. Similar attitude has also been reported among medical students in previous studies in Nigeria²², Near Guinea¹² and Malaysia.²⁴ Students' negative attitude towards the mentally ill, probably, reflects that of the community at large. Aydin and his colleagues had earlier suggested that stigmatizing attitudes of the society are also shared by medical professionals.⁸ Such attitude among our respondents is probably not surprising against the backdrop of students' views that PWMI are dangerous, nuisance to the public and retarded. According to Corrigan and his colleagues, such views are known to fuel resentment of persons with mental illness.²⁵ Following psychiatric training, large percentage of P2 endorsed items that indicate positive attitudes towards PWMI, for example 90% (as against 40% of P1) would be able to maintain a friendship with PWMI; thus, there was a shift towards increased tolerance of PWMI following training. It has been postulated that stigmatizing attitude towards the mentally ill may improve with clinical exposure during medical school training.¹⁸ Our findings are in keeping with this suggestion and similar findings were reported in Malaysia²⁴ and India¹⁹. Although a few studies had either reported that there was no general change in attitude of medical students following practical training in psychiatry¹⁸ or that students attitudes towards mental illness were influenced more by their cultural beliefs and their family history of mental illness than by their rotation in psychiatry¹²; overwhelming evidence is in support of significant change in attitude attributable to their training.^{22,26} A fundamental aim of medical education

should be promoting positive attitude towards PWMI in order to ensure adequate care for them.

Gender difference in respondents' attitude towards PWMI

In this study, there was no significant difference between males and females in their attitude towards PWMI. Similarly, some previous studies reported a lack of gender difference in attitude¹² while some other studies have suggested that female students exhibit more positive attitudes than males.^{13,16} Although quite a number of theories and hypotheses about gender differences in beliefs and attitudes about mental illness have been proposed, the empirical evidence is rather scarce;²⁸ further studies are needed.

CONCLUSION

The findings of this study suggest that negative views and attitudes towards the mentally ill is held even among educated people, more so, among medical students. Prior to psychiatric training, our sample of medical students' views and beliefs about, and attitudes towards the mentally ill were akin to lay beliefs, views and attitudes. This was evident by the lack of significant differences between pre-training medical students and controls regarding their answers to most of the items on the questionnaire. Following the completion of training most medical students expressed accurate belief about aetiology of mental illness, less discriminatory views about the mentally ill, better appreciation of therapeutic intervention and more positive attitudes towards PWMI. These findings are in keeping with the expectation of the psychiatric training program. Ability to enhance knowledge and change negative attitudes must be central in the medical students psychiatric training. Changes in the undergraduate curricula of Nigerian medical schools to favour a psychiatric training that will be more interactive and problem-solving oriented is suggested.

Limitations of the study

The relatively small sample size, is a limitation of the study necessitating a cautious generalization of the findings.

REFERENCES

1. Ukpong DI, Abasiubong F. Stigmatizing attitudes towards the mentally ill: A Survey in a Nigerian University Teaching Hospital. *South African Journal of Psychiatry* 2010 April; 16(2): 56-60.
2. Thara R, Srinivasan TN. How stigmatizing is Schizophrenia in India? *International Journal of Social Psychiatry* 2000; 46:135-141.
3. Murphy RS. Stigma is universal but experiences are local. *World psychiatry* 2002; 1(28): 67-76.
4. Botha UA, Koen L, Niechanus DJH. Perceptions of a South African Schizophrenia population with regards to community attitudes towards their illness social psychology and psychiatric *Epidemiology* 2006; 41:619-623.
5. Mohammed Z, Isa SA, Muktar HA. Perception and beliefs about mental illness among Karfi village, Northern Nigeria. *Journal of International Health and Human rights* 2004; 4(3): 1-8.
6. Jegede AS. The notion of “were” in Yoruba conception of Mental illness. *Nordic Journal of African studies* 2005; 3(2): 5-9.
7. Arvaniti A, Samakour M, Kalamara E, Bochtsou V, Kalamara E, Bochtsou V et al. Health Service staff's Attitudes towards patients with Mental Illness. *Social Psychiatry and Psychiatry Epidemiology* 2009; 44(8): 658-665.
8. Aydin N, Yigit A, Inandi T, Kirpinar I. Attitudes of Hospital staff toward mentally ill patients in a Teaching Hospital, Turkey. *International Journal of Social Psychiatry* 2003; 49 (1): 17-26.
9. Uzok A, Polat A, Sartomus N, Erkoc S, Atakli C. Attitudes of Psychiatrists toward patients with Schizophrenia. *Psychiatry and clinical Neuro Sciences* 2004; 58(1): 89-91.
10. Adewuya AO, Oguntade AA. Doctors' attitude towards people with mental illness in Western Nigeria. *Soc Psychiatry Psychiatry Epidemiology* 2007; 42(11): 931-6
11. Adriaensen K, Pieters G, De Lapeleire J. Stigmatization of Psychiatric Patients by general practitioners and medical students: a review of the literature. *Tijdschr Psychiatry* 2011; 53 (12): 885-94.
12. Muga F, Hagali M. What do final year medical students at the University of Papua, New Guinea Think of Psychiatry? *PNG Medical Journal* 2006; 49(3-4): 126-36
13. Chung KF. Changing The Attitudes of Hong Kong medical students towards people with mental illness. *Journal of Nervous and mental diseases* 2005; 193 (11): 766-768.
14. Malhi GS, Parker GB, Parker K, Kirkby KC, Boyce P, Yellowlees P. Shrinking away from Psychiatry? A survey of Australian medical students' Interest in Psychiatry. *Aust. New Zealand Journal of Psychiatry* 2002; 36: 416-423
15. Altindag A, Yamik M, Ucok A, Alptekin K, Ozkan M. Effects of an anti-stigma program on medical students' attitudes towards people with schizophrenia. *Psychiatry and clinical neuro sciences* 2006; 60 (3): 283-288.
16. Reddy JP, Tan SM, Azm MT, Shaharom MH, Rosdinom R, Mania T. et al. The effect of a clinical posting in Psychiatry on the attitudes of medical students towards psychiatry and mental illness in a Malaysian medical school. *Annals of Academic Medicine, Singapore* 2005; 34 (8): 505-10.
17. Kuhnigk O, Strebel B, Schilauske J, Jueptner M. Attitudes of medical students towards psychiatry: effects of training, courses in psychiatry, Psychiatric experience and gender. *Advanced Health Science Education Theory Practice*. 2007; 12 (1): 87-101.
18. Tan SM, Azm MT, Reddy JP, Shaharom MH, Rosdinom R, Maniam T. et al. Does Clinical Exposure to Patients in Medical School affect Trainee Doctors' Attitudes

- towards Mental Disorders and Patients? A Pilot study. *Medical Journal of Malaysia* 2005; 60 (3) 328-337.
19. Tharyn P, John T, Tharyn A, Braganga D. Attitudes of 'tomorrow's doctors' towards psychiatry and mental illness. *National Medical Journal of India*. 2001; 14(6): 355-9.
 20. Oye Gureje, Victor O. Lasebikan, Olusola Ephraim- Oluwanuga, Benjamin O. Olley, Lola Kola. Community study of knowledge of and attitude to mental illness in Nigeria. *British Journal of Psychiatry* 2005; 186, 436-441.
 21. World Psychiatric Association. WPA programme to Reduce stigma and Discrimination Because of Schizophrenia. http://www.doors.com/english/media/vol_3.pdf (accessed January 2013).
 22. Olatunji F. Aina, Tajudeen F. Suleimn, Yewande O. Oshodi, Derin O. Olorunshola. Medical students' beliefs about treatment and rehabilitation of persons with mental illness. *Journal of Neuro Sciences and Behavioural Health* 2010; 2(2): 012-017. Available online <http://www.acad> © 2010 Academic Journals (accessed January 2013).
 23. Crabb J, Stewart RC, Kokota D, Masson N, Chabunya S, Krighuadas R. Attitudes towards mental illness in Malawi: a Cross-sectional Survey. *BMC Public Health* 2012; 12:54-59
 24. Mas A, Hatim A. Stigma in mental illness: attitudes of medical students towards mental illness. *Medical Journal of Malaysia* 2002; 57(4): 433-44
 25. Corrigan PW, Watson AC. Understanding The Impact of stigma on people with mental illness . *World Psychiatry* 2002; 1:16-20
 26. Olotu OS, Osahon PO. The effects of clinical Posting in Psychiatry on the beliefs and attitudes of medical students and the discipline. *Nigeria Journal of Psychiatry* 2001; 1 (5): 305-314.
 27. Naeem F, Ayub M, Jared Z, Irfan M, Haral F, Kingdom D. Stigma and Psychiatric illness: A survey of attitude of medical students and doctors in Lahore, Pakistan. *Journal of Ayub Medical College, AbboHabad* 2006; 18 (3): 46-49.
 28. Holzinger A, Floris F, Schomerus G, Carta MG, Angemeyer MC. Gender differences in public beliefs and attitudes about mental disorder in Western Countries: a systematic review of population studies. *Epidemiology Psychiatry Sciences* 2012; 21(1): 73-85.