

Knowledge, attitude and practice (KAP) of mental illness among staff in general medical facilities in Kenya: practice and policy implications

DM Ndetei^{1,2}, LI Khasakhala^{1,2}, V Mutiso², AW Mbwayo²

¹Department of Psychiatry, University of Nairobi, Nairobi, Kenya

²Africa Mental Health Foundation (AMHF), Nairobi, Kenya

Abstract

Objective: To determine the knowledge, attitudes and beliefs about mental illness among staff in general hospitals. **Method:** A descriptive cross-sectional study conducted on staff in ten medical facilities in Kenya on their socio-demographic characteristics, professional qualifications and knowledge, attitudes and practice (KAP) toward mental illness. **Results:** A total of 684 general hospital staff: nurses (47.8%); doctors (18.1%); registered clinical officers (5.1%); students (9.5%) and support staff (19.5%) were recruited. About three quarters were under 40 years of age; most thought mental illness could be managed in general hospital facilities; the older the doctors were (age 40 years and older) the more they were aware of and positive towards mental illness. Most of the workers did not suspect any psychiatric symptoms among the patients they treated resulting in low referral rates for psychiatric services. **Conclusion:** There are gaps in knowledge on mental illness which could be constructively filled with Continued Medical Education (CME).

Key words: Hospital, General; Health Knowledge, Attitudes, Practice; Mental disorders; Kenya

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Introduction

Psychiatric disorders are a major burden of disease worldwide, often treated by non-psychiatrist health workers in general health facilities. In general health facilities, once patients are seen by non-psychiatric health workers, referral to psychiatrists or other mental health professionals is imperceptible.¹⁻³ This arises in most circumstances for reasons that include: greater patient comfort with non-psychiatric workers in general health facilities; the desire to avoid being labeled mentally ill; and a long waiting period for a psychiatric consultation. It is therefore important to acknowledge that non-psychiatric health workers in general

medical facilities play a pivotal role in the diagnosis and management of patients with mental illness.¹⁻⁴

However, although non-psychiatric workers in general medical facilities may acknowledge responsibility for this pivotal role in these interventions, they may miss diagnoses of mental illnesses due to lack of knowledge and time when evaluating patients presenting with psychiatric symptoms.⁵ Missing a diagnosis of mental disorder within a general health facility has been associated with negative stereotypes and stigmatizing attitudes reported among hospital staff who have sufficient knowledge about schizophrenia and depression.⁶⁻⁷ One of the strongest stereotype beliefs of the general public towards psychiatric patients holds that psychiatric patients have a tendency to cause injury or harm to others and to property.⁸⁻¹¹ This is mainly towards psychiatric patients who are (so-called) "wandering psychotics" and are viewed as worthless, dirty, senseless, dangerous and unpredictable.⁸⁻¹¹ As indicated by Muga and Jenkins⁸, even if primary health care workers are

Correspondence

Prof. DM Ndetei
Department of Psychiatry, University of Nairobi, Kenya & Director,
Africa Mental Health Foundation (AMHF),
P.O. Box 48423-00100 Nairobi, Kenya.
email: dmmndetei@uonbi.ac.ke

capable of handling psychiatric problems, they prefer such patients to be managed by specialist mental health institutions. The negative stereotyped mindset of society towards people with mental illness leads to behaviours that worsen the burden of illness of the sick person. The burden of illness as stated by the World Health Organisation (WHO) ranges from the economic difficulties faced by the mentally ill person and his/her family (discrimination against carrying out any livelihood activities) to emotional reactions to the illness, the stress of coping with disturbed behaviour, the disruption of household routine and restriction from participating in social activities.¹²

In many African societies, psychiatric illness is believed to be either an outcome of a familial defect or the 'handiwork of evil machinations' (demons, evil spirits).¹¹ These negative beliefs result in psychiatric patients being seen as outcasts and people who should be quarantined.¹¹ Another common societal belief is that psychiatric patients are responsible for their illness, especially when it is an alcohol and/or substance-related problem. This stigmatization denies psychiatric patients the empathy and understanding traditionally bestowed on the sick in the African society.¹⁰⁻¹¹ Stigma signifies a mark indicating that someone is of a lesser value than others, and this attitude also abounds among health workers in most cultures.^{13,14} Having knowledge of mental illness does not always reduce the stigmatizing attitudes of primary health care workers.⁷ Prejudice towards people with mental illness has been shown to correlate with societal ignorance that such persons are dangerous and unpredictable, less competent and unable to live productive lives. This in turn increases stigma towards persons with mental disorders despite increased knowledge in mental health recognition, diagnosis and management by health workers.¹³

Stigmatising attitudes towards people with mental illness is also common among all classes of people in Europe and America.¹⁵⁻¹⁷ Expressed negative opinions towards consumers of

mental health services still occur – possibly due to the majority of the non-psychiatric health workers lacking the understanding of biological and environmental factors that cause mental illnesses.¹⁵ These studies have also shown differences in the nature and extent of stigma attached to the various psychiatric illnesses by the different cadres of medical health workers.¹⁵⁻²²

This study therefore aimed to determine the knowledge of and attitude towards mental illness among hospital staff in general medical facilities. This information would be useful in the formulation of policy for training, management and service delivery on mental health issues in general medical facilities and add to the global data on the same subject.

Methods

Study design

This was a cross-sectional survey conducted in ten health facilities which were selected to represent all levels of health provision from primary health care to the national level as described in Table I. The survey also represented different economic environments within which the facilities are located (industrial, agricultural, pastoralists, rural and urban) as well as the different cadres of medical personnel. In recognition of the need to serve its people in their communities as well as the need for early intervention and follow-up services, the government of Kenya instituted different health care facility levels and the kind of staff to be deployed.²³ The health facilities representing the above spectrum were selected for this survey on the basis of their proximity (within a 200 kilometre radius) to Nairobi, the capital city of Kenya. Data was collected by interviewing medical personnel in the selected general medical facilities using an in-depth 76 item structured questionnaire adapted from Mayou and Smith.²⁴ This is a questionnaire which has been used to assess how hospital doctors manage psychological problems.²⁵ This interview schedule focused on medical workers' assessment of

Table I: Description of the different types of medical staff in the study population

<i>Medical staff</i>	<i>Qualifications</i>	<i>Where found</i>
Doctors Specialists (Consultants)	Post-graduate specialisation in different disciplines	Some hospitals, mainly tertiary, provincial and some district hospitals
Medical Officers of Health Registrars (residents) Interns	Registered doctors Post-graduate students, specialising in different areas of medicine Have just completed qualification course (MB.Ch.B). Serving in hospitals to gain mandatory experience	Any hospital Tertiary level/teaching hospitals Provincial hospitals
Clinical officers	Post-secondary school diploma graduates of clinical medicine	Health centres and other levels of hospitals
Nurses	Enrolled (lowest level) Diploma (post-secondary school) BSc. Graduates (degree qualification)	All general hospitals
Other professionals	University or post-secondary school diploma graduates in pharmacy, dentistry, occupational therapy, rehabilitation, physiotherapy and laboratory medicine	All general hospitals
Students University students Diploma students Administrators	Studying medicine, pharmacy, dentistry and pharmacy at degree level Studying for various disciplines Diploma or graduate administration on top of basic medical qualification	Tertiary level hospitals Tertiary level, provincial and district hospitals All level

psychological problems, their attitudes towards psychosocial care in managing these problems, referral to psychiatrists and treatment. It is a self-rated questionnaire for the medical workers to rate subjectively what they know about mental illness (including: the number of patients they see and refer for psychiatric evaluation on suspicion that they have mental disorder; their attitudes on who should and where to manage mental disorders; their behaviour towards mental illness; their KAP; and stigmatization of depression.) Socio-demographic data were collected via a self-report instrument for the following variables: age, gender, medical qualifications, year of attaining basic medical qualifications, employment status, and deployment location (Table I).

Ethical issues

This study was approved by the Kenyatta National Hospital Ethics and Research Committee. Informed consent was obtained from all the staff who participated in the study with the right to withdraw at any point during the study. No invasive procedures were used and no incentives were offered for participation. The participants received an explanation that the study results would be of benefit to the general practice of medicine. Confidentiality of results was assured.

Subjects

All the staff members that were in the different health facilities and on duty during the study period were recruited into the study. The different cadres of staff in the medical facilities that were recruited into this study included doctors, clinical officers, nurses and professionals in pharmacy, dentistry, occupational therapy, rehabilitation, physiotherapy and laboratory medicine, students and administrators (Table I).

Instrument and procedures

The instrument was self-administered and consisted of three sections. Part I which had eleven items, elicited information

about socio-demographic characteristics, professional qualifications, experience and status. Part II was intended to gauge: a) staff awareness level of possibility for mental illness in those patients they saw; b) the general exposure of the staff to psychiatric training and their expressed need for such exposure. This included a sub-section (with a 'yes' or 'no' response format) on the felt need for continuing medical education (CME). Part III inquired about staff attitude to mental illness and implied stigma in relation to depression. The items in this section were worded as statements and the responses were coded on a five-point scale with '1' for 'strongly agree' and '5' for 'strongly disagree.'

The questionnaires were distributed to all the staff while they were at their workstations and were to be completed during their free time. The completed questionnaires were then placed in a central location for collection by one person who had been allocated the duty of following up this exercise. All the questionnaires were then forwarded to the research office.

Data analysis

The data was managed and analysed using SPSS version 11.5. Descriptive data was summarized using simple percentages, range and measures of central tendency (mean median and mode). The responses from the five-point scale were collapsed into three categories representing negative (if they were scored on the negative side of the midpoint), neutral and positive views.

Results

Socio-demographic characteristics and professional background (Table II)

The overall response rate on the variables of age, gender and professional qualification was 97.0% (n=644) among respondents who filled out the socio-demographic

Table II: Age, gender and qualification of medical staff (%) (N=684)

Variables	All sites	KNH	Embu	Kiambu	Kikuyu	Kajiado	Kibera	Makindu	Naivasha	Magadi	Karuri
Age (years)	648	299	64	93	29	54	2	75	23	4	5
19-29	31.3	23.2	48.4	40.9	55.3	31.5	50.0	12.0	13.0	75.0	100
30-39	41.0	45.5	18.8	36.9	37.9	48.1	0	44.0	43.5	0	0
40-49	21.6	23.4	28.1	14.0	6.8	20.4	50.0	32.0	34.8	0	0
50-59	6.2	7.9	4.7	8.6	0	0	0	12.0	8.7	25.0	0
Gender	659	301	64	96	31	56	2	78	22	4	5
Male	39.9	45.4	31.3	38.5	35.5	35.7	50.0	42.3	31.8	100	40.0
Female	60.1	54.6	68.7	61.5	64.5	64.3	50.0	57.7	68.2	0	60.0
Basic qualifications	684	318	66	98	32	55	3	78	25	4	5
Nursing	47.8	40.7	37.9	53.1	56.3	58.2	33.3	57.7	64.0	25.0	20.0
Medical degree	18.1	35.0	4.5	10.2	12.5	0	0	3.8	12.0	0	0
Clinical officer	5.1	1.1	1.5	17.3	3.1	3.6	33.3	3.8	20	0	0
Student	9.5	5.7	39.4	7.1	18.8	9.1	0	0	0	25.0	60.0
Others	19.5	17.5	16.6	12.1	9.4	21.8	33.3	34.2	4.0	25.0	20.0

N values for each of the sites are indicated in bold type

Chi-square tests done between doctors and nurses in study population because of their sufficient numbers are the main health service providers in these facilities

Chi square of 103.3, degree of freedom of 1 and p value of 0.001 among nurses and doctors on exploration of gender

Chi square of 90.428, degree of freedom of 3 and p value of 0.124 between age on exploration of gender

variables fully. However, the response varied across the completed study instruments giving slight variations across the study variables. The mean age of the staff was 34.6 years (range, 19-59, median 34, mode 30). Overall, 60.1% (n=411) of the respondents were female but at the Magadi site (Table II), all the respondents were males. Nurses constituted nearly half (47.8%, n=327) of the total sample and the remainder was made up of doctors (18.1%, n=124), clinical officers (5.1%), students (9.5%) and other professionals (19.5%). There was a significant statistical difference between nurses and doctors in the study population, most nurses were females (n=327) compared to doctors who most were males (n=89). However there was no age difference between doctors or nurses across the study population (p=0.124).

Rates of suspicion of mental illness and referring patients to mental health specialist (Table III)

Out of a total of 684 staff recruited in this study, 569 (83%) responded to the question on suspecting significant psychiatric component, 575 (84.1%) to the question on mild psychiatric component, and 472 (69%) referred patient to a mental health care specialist (responded respectively to the

question on suspecting significant psychiatric component, mild psychiatric component and referring patients to mental health specialist out of every 100 patients treated for physical illness). The proportions of staff who thought more than 10 out of 100 patients they saw had a significant psychiatric illness was 33.4%, while 50.4% thought that more than 10 out of 100 patients had a mild psychiatric component, with only 17.3% of the staff referring more than 10 out of 100 patients they saw to mental health specialist. The highest rate of suspicion was reported at the KNH and the Embu Provincial Hospital (these were the only facilities with resident psychiatrists). Kiambu, Kajiado, Makindu and Naivasha (district and sub-district hospitals) had resident psychiatric nurses while the other facilities included in the study had no personnel trained in mental health services provision. The same patterns were reflected in the proportion of patients referred for psychiatric assessment in the same facilities. Overall, there was a significant statistical difference between the number of patients referred to mental health specialists for evaluation or treatment among staff and on suspicion that the patients could be having severe or mild psychiatric symptoms (p=0.001).

Table III: Rates of suspicion of mental illness and referring patients to mental health specialist

For every 100 patients, number of patients suspected to have a mental illness	All sites	KNH	Embu	Kiambu	Kikuyu	Kajiado	Kibera	Makindu	Naivasha	Magadi	Karuri	X ²	P=
Proportion of staff suspecting significant psychiatric component out of every 100 patients treated for physical illness (%)													
	569	262	54	85	21	51	3	63	21	4	5	2.508 53	P=0.001
0-2	22.2	18.3	16.7	36.5	33.3	29.4	33.3	14.3	4.8	50.0	60.0		
3-5	18.5	18.7	18.5	17.6	28.6	17.6	33.3	14.3	14.3	25.0	40.0		
6-10	26.0	26.7	24.1	20.0	19.0	21.6	33.3	33.3	47.6	25.0	0		
11+	33.4	36.3	40.8	26.0	19.1	31.4	0	38.2	33.4	0	0		
Proportion of staff suspecting a mild psychiatric component out of every 100 patients treated for physical illness (%)													
	575	262	54	89	23	51	3	63	21	4	5	. 3.119	P=0.001
0-2	18.6	16.8	14.8	24.7	3.4	29.4	33.3	9.6	4.8	50.0	20.0		
3-5	13.7	11.8	20.4	16.9	4.3	17.6	0	9.5	9.5	25.0	60.0		
6-10	17.2	13.4	14.8	28.1	17.4	19.6	0	14.3	28.6	25.0	20.0		
11-20	22.4	24.8	22.2	16.9	21.7	7.8	66.7	28.6	38.1	0	0		
21+	28.0	33.2	27.9	13.4	26.0	25.4	0	38.1	19.1	0	0		
Proportion of staff referring patients to mental health specialists out of every 100 patients attended to by the staff (%)													
	472	228	45	41	23	48	1	60	18	3	5	1.347	P=0.000
0-2	42.8	34.7	35.6	51.2	60.8	58.4	100.0	50.0	33.3	66.7	100		
3-5	19.1	21.5	13.3	19.5	21.7	25.0	0	5.0	33.3	33.3	0		
6-10	21.0	24.6	20.0	19.5	8.7	12.5	0	25.0	16.7	0	0		
11+	17.3	19.2	31.1	9.6	8.6	4.2	0	20.0	16.7	0	0		
N values for all sites are indicated in bold type N values for each of the sites are indicated in bold type Chi square tests done between nurses and doctors who are the main service providers in the general health facilities and numbers (N) are sufficient for statistical testing													

Attitudes of staff on who should and where to manage mental illness (Table IV)

These were measured on eight dimensions. The average response rate to the questions among respondents who completed the instrument was 92.4% (n=632) across all the items. Dimensions (i) and (ii) mirrored each other: 17.9% (n=122) of the staff thought that mental illness could be managed only by a psychiatrist, while 89.1% (n=609) thought that non-psychiatric doctors had an important role to play (Table 3; i-ii). Overall there was no statistically significant difference among respondents on these two items ($p=0.099$ & $p=0.159$ respectively). Twice as many nurses as doctors reported that mental illness could only be managed in a psychiatric hospital

(Table IV; iii), giving a statistically significant difference ($p=0.013$). Similar proportions of doctors, nurses and other professionals felt that mental illnesses can be successfully managed in general hospitals (Table IV; iv) and at outpatient facilities (Table IV; v) respectively with no

statistically significant difference ($p=0.11$ & $p=0.175$ respectively). On average, one-third of all staff reported that mental illnesses could be successfully managed at home by families (Table IV; vi), however there was no statistical significant difference among the staff cadre (nurses and doctors, $p=0.125$).

Stigma of staff towards managing mental illness and depression (Table V)

A much smaller proportion (1.7%) of the staff felt that mental illness was a problem for the relatives while 2.6% of medical staff thought mental illness was best managed by a witchdoctor (Table V; a1-ii). However there was no significant statistical difference between the staff cadres who said mental illness was a problem of the relatives ($p=0.384$) and those who said mental illness was best treated by a witchdoctor ($p=0.126$).

Similar proportions of doctors and nurses stigmatised persons with depression while majority of clinical officers,

Table IV: Attitudes of staff on who should and where to manage mental illness (%)

All staff	Clinical officers	Doctors	Nurses	Other professionals	Students	χ^2	$P=$
(i) Mental illness can only be managed by a psychiatrist						7.815 Df 4	0.099
620 17.9	29 6.9	119 14.3	298 22.5	122 15.6	52 11.5		
(ii) Non-psychiatric doctors have an important role to play						6.596 Df 4	0.159
661 89.1	33 100	121 82.6	310 90.3	133 89.5	64 89.1		
(iii) Mental illness can only be managed in a psychiatric hospital						19.425 Df 3	.013
n= Yes	647 22.1	31 6.5	120 12.5	310 25.8	128 23.4	58 27.6	
(iv) Mental illness can be successfully managed in general hospitals						11.03 Df 4	0.110
n= Yes	647 73.8	31 96.8	122 76.2	307 72.0	126 74.6	61 62.3	
(v) Mental illness can be successfully managed in outpatient facilities of general hospitals						11.419 Df 4	0.175
n= Yes	642 60.1	34 70.6	118 68.6	309 61.5	126 56.3	55 36.4	
(vi) Mental illness can be successfully managed at home by families						12.367 Df 3	0.125
n= Yes	623 37.6	29 31.0	118 49.2	302 34.1	119 38.7	55 32.7	

N values for each of the sites are indicated in bold type

Chi square tests done between nurses and doctors who are the main service providers in the general health facilities and numbers (N) are sufficient for statistical testing

nurses and students were uncertain. The same patterns were reported on the dimension asking about general views on people with depression (Table V; b). Medical and nursing students as well as administrators and para-medicals stigmatised patients with depression ($p=0.001$) and also had negative attitudes towards patients with depression compared with qualified doctors and nurses ($p=0.001$). The proportion of younger doctors who stigmatised patients with depression was lower than that of older doctors. Younger nurses tended to stigmatise patients with depression more than older nurses and younger doctors (Table V; c i-ii). However there was no significant statistical difference where age was considered.

Knowledge, Attitude and Practice (KAP) on mental illness (Table VI)

The response rate to questions for the section on KAP on mental illness (i-vi in Table VI) was 92.7%. Fifty percent of the doctors were aware of mental illness (Table VI; i), with a significant statistical difference ($p=0.001$) between the staff cadre. Similar proportions of doctors and nurses reported that they felt responsible for following up common types of psychological disorders (Table VI; ii), there was no statistical significant difference between the staff cadre ($p=0.120$). More doctors (Table VI; iii), assessed patients despite greater time constraints than any other staff cadre, with a significant

Table V: Stigma of staff towards managing mental illness

	All staff	Clinical officers	Doctors	Nurses	Other professionals	Students	χ^2 (df=4)	P=
(4a i) Mental illness is best managed by witchdoctors								
n=	608	28	115	291	123	51	7.88	0.126
Yes	2.6	3.6	5.2	3.1	0	0		
(4a ii) Mental illness is a problem only for the relatives								
n=	606	28	115	289	123	51	4.093	0.394
Yes	1.7	0	3.5	2.1	0	0		
(4b) Stigmatization of Depression								
(i) Stigma toward persons with depression								
Stigmatise	0	3.4	0	2.5	9.2	7.5	332.5	=0.001
Uncertain	58.3	33.1	84.6	77.2	59.6	75.5		
Do not stigmatise	16.6	61.9	15.4	19.3	24.8	9.4		
(ii) General views on people with depression								
Stigmatise	0	0	0	0	14.7	0	335	0.001
Uncertain	50.0	23.7	88.5	57.0	62.4	60.4		
Do not stigmatise	0	55.1	8.0	12.7	13.8	0		
(4c) Stigmatisation by								
(i) Persons with depression								
	Doctors			Nurses				
Age in years**	≤30	31-40	>40	≤30	31-40	>40		
Stigmatise	2.0	4.5	5.0	5.8	1.6	1.2	7.67	0.104
Uncertain	31.4	38.6	20.0	69.8	81.4	78.6		
Don't stigmatise	64.7	56.8	75.0	22.1	17.1	15.5		
(ii) General views on people with depression								
Stigmatise	15.7	29.5	5.0	54.7	24.8	26.2	8.149	0.086
Uncertain	23.5	22.7	25.0	39.5	60.5	64.3		
Don't stigmatise	58.8	47.7	70.0	5.8	2.3	6.0		

*On some items, percentages do not add up to 100% because of missing responses of age (not everybody gave their age).

**Medical students graduate as doctors when they are aged between 23 and 25 years whilst on average, nurses graduate 1-2 years earlier. Doctors who specialise normally complete their postgraduate studies when they are in the 31-40-year age range, depending on the mandatory minimum services they must render before they are allowed to specialise.

N values for each of the sites are indicated in bold type

Chi square tests done between nurses and doctors who are the main service providers in the general health facilities and numbers (N) are sufficient for statistical testing

Table VI: KAP on mental illness in general and stigmatisation of depression in particular by general hospital staff

	<i>Administrators</i>	<i>Doctors</i>	<i>Clinical officers</i>	<i>Nurses</i>	<i>Other professionals</i>	<i>Students</i>	χ^2 (df=4)	P=
N	12	118	26	316	109	53		
(i) Knowledge about mental disorders								
Aware	33.3	50.0	30.8	34.2	36.0	47.2	145.6	0.001
Uncertain	41.7	32.2	50.0	57.3	59.4	47.2		
Unaware	25.0	18.0	11.5	8.5	4.7	5.6		
(ii) Responsibility for following up common types of psychological disorders								
Aware	25.0	61.0	46.2	64.6	56.6	64.2	116.3	0.120
Uncertain	50.0	31.4	42.3	31.3	33.0	32.1		
Unaware	25.0	7.6	0	1.6	4.7	1.9		
(iii) Assessment of psychological disorders and time as a constraint								
Aware	8.3	28.0	7.7	15.2	18.3	18.9	172.9	0.001
Uncertain	58.3	21.2	76.9	67.1	69.7	69.8		
Unaware	8.3	49.2	11.5	14.9	10.1	5.7		
(iv) Knowledge on treatments in general hospital facilities								
Aware	25.0	53.4	38.5	5.1	24.8	47.2	152.3	0.001
Uncertain	25.0	42.2	57.7	32.3	53.2	41.5		
Unaware	25.0	3.4	0	54.4	17.4	1.9		
(v) Knowledge on psychiatry in general								
Aware	0	12.7	15.4	25.0	16.5	17.0	335.2	0.001
Uncertain	50.0	72.0	76.9	59.2	65.1	67.9		
Unaware	25.0	14.4	3.8	11.7	11.0	5.7		
(vi) General hospital staff attitudes toward mental health								
Positive	0	45.8	46.2	29.4	25.7	34.0	351.4	0.001
Uncertain	25.0	34.7	42.3	56.6	57.8	45.3		
Negative	50.0	18.6	7.7	9.5	10.1	3.8		
N values for each of the sites are indicated in bold type								
Chi square tests done between nurses and doctors who are the main service providers in the general health facilities and numbers (N) are sufficient for statistical testing								

statistical difference ($p=0.001$) between the staff cadre. More than half of the doctors and 47.2% of the students were aware of treatment (of mental disorders) in the general hospital facilities (Table VI; iv), with a significant statistical difference ($p=0.001$) between the staff cadre. Among all the staff, more doctors and nurses compared to other staff cadre responded positively to having knowledge on psychiatry in general (Table VI; v), with a significant statistical difference ($p=0.001$) between the staff cadre.

Knowledge, Attitude and Practice (KAP) and stigma towards Mental illness in general and depression amongst doctors and nurses by age (Table VII)

The proportion of doctors who reported that they were knowledgeable about mental disorders (Table VII; a i) was higher than that of nurses across all the age bands. The proportion of doctors who were aware about mental disorders

increased with age but among the nurses, there was a slight decrease in awareness with increase in age. More doctors aged 40 years and above felt responsibility for people with mental disorders compared (Table VII; a ii) to nurses whose proportion decreased with increase in age. Compared with the other age bands, a higher proportion of doctors and nurses aged between 20 and 30 years were aware of the need for assessment of psychological disorders (Table VII; a iii). The proportion of younger doctors and nurses who reported as having knowledge on treatments in general medical facilities (Table VII; a iv) was greater than that of older doctors and nurses. A smaller proportion of doctors who were aged between 25-30 years compared to those aged more than 40 years reported awareness of knowledge in psychiatry in general (Table VII; a v). Among the younger nurses (aged between 20 and 30 years), the proportion of those who were "unaware" related to knowledge in psychiatry was higher than

among older nurses (aged 40 years and above). The two extremes of age bands for the doctors and nurses had more positive attitude towards mental illness than the mid-band (Table VII; a vi).

Correlation between Stigma, Attitudes and Knowledge towards Mental Illness (Table VIII)

Higher scores indicating a positive attitude towards mental illness significantly correlated ($p < 0.001$) with higher scores indicating less stigmatization of patients with mental illness and also ($p < 0.001$) increased knowledge on mental disorders. Higher scores indicating positive attitudes significantly correlated ($p < 0.001$) with increased awareness that: patients in general health facilities presenting with common mental

disorders were the staff's responsibility (Knowledge 1) to manage their common psychological problems; time constrain should not be a limiting factor when assessing these patients (Knowledge 2); these patients can be treated in general health facilities (Knowledge 3); depression is the most common disorder among patients with mental disorders; people with depression cannot break down at any time, are not weak or dangerous (Knowledge 4); and generally people with depression are discriminated against by the general public (Knowledge 5). However there were negative significant correlations between: stigma towards people with mental illness and knowledge 4 ($p = 0.047$); knowledge 1 and knowledge 4 ($p < 0.001$); knowledge 2 and knowledge 4 ($p = 0.002$); and knowledge 2 and knowledge 5 ($p = 0.002$).

Table VII: KAP on mental illness in general and stigmatization of depression in particular by doctors and nurses according to age (%)*

	Doctors			Nurses		
Age in years**	≤30	31-40	>40	≤30	31-40	>40
n (%)	51 (44.4)	44 (38.3)	20 (17.4)	86 (28.8)	129 (43.1)	84 (28.1)
(a) KAP on Mental illness in General						
(i) Knowledge about mental disorders						
Aware	45.1	47.7	70.0	38.4	31.0	34.5
Uncertain	31.4	36.4	20.0	50.0	59.7	57.1
Unaware	23.5	15.9	10.0	10.5	7.0	8.3
(ii) Responsibility for following up common types of psychological disorders						
Aware	58.8	54.5	75.0	66.3	67.4	60.0
Uncertain	31.4	40.9	15.0	29.1	29.5	34.5
Unaware	9.8	4.5	10.0	3.5	0.8	1.2
(iii) Assessment of psychological disorders and time as a constraint						
Aware	33.3	22.7	25.0	20.9	13.2	14.3
Uncertain	37.3	61.4	65.0	60.5	68.2	69.0
Unaware	29.4	11.4	10.0	11.6	14.7	14.3
(iv) Knowledge on treatments in general hospitals/facilities						
Aware	50.9	56.8	50.0	46.5	24.0	28.6
Uncertain	41.2	38.6	45.0	39.5	61.2	59.5
Unaware	2.0	4.5	5.0	8.1	12.4	2.4
(v) Knowledge on psychiatry in general						
Aware	9.8	9.1	25.0	32.6	18.6	25.0
Uncertain	76.5	72.7	65.0	51.2	59.7	61.9
Unaware	13.7	15.9	10.0	14.0	11.6	7.1
(vi) General hospital staff attitudes toward mental health						
Positive	39.2	18.2	65.0	44.2	19.4	28.6
Uncertain	37.3	38.6	20.0	45.3	64.3	53.6
Negative	21.6	43.2	15.0	7.0	11.6	10.7

*On some items, percentages do not add up to 100% because of missing responses of age (not everybody gave their age).

**Medical students graduate as doctors when they are aged between 23 and 25 years whilst on average, nurses graduate 1-2 years earlier. Doctors who specialise normally complete their postgraduate studies when they are in the 31-40-year age range, depending on the mandatory minimum services they must render before they are allowed to specialise.

Table VIII: Correlation between Stigma, Attitudes and Knowledge towards Mental Illness

Correlations		Attitude	Stigma	Knowledge(K) (Dimension: i-v) ¹	K-i	K-ii	K-iii	K-iv	K-v
Attitude	Pearson Correlation Sig. (2-tailed) N	1 .000 599	.195** .000 518	.250** .000 296	.326** .000 578	.451** .000 576	.363** .000 568	.040 .334 585	.178** .000 578
stigma	Pearson Correlation Sig. (2-tailed) N	.195** .000 518	1 .000 550	.760** .000 307	.161** .000 529	.123** .005 530	.103* .018 525	-.086* .047 536	-.029 .498 531
Increased Knowledge	Pearson Correlation Sig. (2-tailed) N	.250** .000 296	.760** .000 307	1 .000 307	.155** .007 297	.179** .002 300	.119* .040 299	.105 .069 301	.198** .001 298
Knowledge-i	Pearson Correlation Sig. (2-tailed) N	.326** .000 578	.161** .000 529	.155** .007 297	1 .000 615	.301** .000 592	.401** .000 583	-.174** .000 596	-.059 .154 589
Knowledge-ii	Pearson Correlation Sig. (2-tailed) N	.451** .000 576	.123** .005 530	.179** .002 300	.301** .000 592	1 .000 615	.441** .000 583	-.128** .002 594	-.125** .002 592
Knowledge-iii	Pearson Correlation Sig. (2-tailed) N	.363** .000 568	.103* .018 525	.119* .040 299	.401** .000 583	.441** .000 583	1 .000 602	-.179** .000 585	-.085* .041 582
Knowledge-iv	Pearson Correlation Sig. (2-tailed) N	.040 .334 585	-.086* .047 536	.105 .069 301	-.174** .000 596	-.128** .002 594	-.179** .000 585	1 .000 621	.555** .000 598
Knowledge-v	Pearson Correlation Sig. (2-tailed) N	.178** .000 578	-.029 .498 531	.198** .001 298	-.059 .154 589	-.125** .002 592	-.085* .041 582	.555** .000 598	1 .000 613

** . Correlation is significant at the 0.05 level (2-tailed).

Labels

Knowledge (Dimension i-v): sum of Knowledge i, Knowledge ii, Knowledge iii, Knowledge iv and Knowledge v

Knowledge i: Staff are aware that it is their responsibility to manage patients with common psychological problems

Knowledge ii: Staff aware that time constraints should not be a limiting factor to manage patients with a mental disorder

Knowledge iii: Staff aware that mental disorders can be managed in general health facilities

Knowledge iv: Staff aware that depression is the most common mental disorder and those clients with depression: cannot break down at any time, that it is not personal weakness, are not dangerous and have a real medical problem

Knowledge v: Staff aware that people with depression are discriminated in general public and avoided

Discussion

This study focused on levels and trends of knowledge, attitude and practice (KAP) related to mental disorders amongst different cadres of staff working in general medical facilities with a view to suggest appropriate practices and policies.

This study was therefore important for developing countries where there is scarcity of mental health workers; Kenya having the best psychiatrist: population ratio²⁶, cannot meet the demands of mental health problems for its population.

The overall high response rates on nearly all the variables implied that the study subjects were keen to participate in the study, more so given that a self-administered questionnaire was used and almost all the staff approached participated in the study. This finding suggests that the hospital staff were interested in mental illness as it was the topic under study. The relatively young age of the

staff suggests that the study participants were professionals in the early stages of their professional development, and it was therefore appropriate to incorporate mental health precepts into their professional development. The fact that there was no statistical difference between professionals' age, in stigmatising patients with mental disorders, indicates that age is not a significant predictor of a positive attitude towards providing medical services to persons who have mental illness. As for the nurses, there has not been a new curriculum integrating mental health into their training and less stigmatization by the older nurses may be as a result of more clinical exposure and awareness in the course of their practice and experience.

There was no apparent gender disparity in the distribution of hospital staff, although there were generally more females than males. This was most likely accounted for by higher

numbers of nurses in all the study sites, the majority of which were in primary health care facilities (district hospitals, sub-district hospitals and the health centres). Apart from nursing being a profession which in Kenya is almost exclusively populated by females, the primary health care services from these general health facilities are provided by nurses.

Suspicion - and referral - by medical personnel that patients have mild to severe psychiatric symptoms

With only one-third (Table III) of the hospital staff suspecting that patients had mild psychiatric disorders, the suggestion is that patients' symptoms which point to a psychiatric disorder in the general health facilities are not evaluated. This has been documented in similar situations elsewhere when instrument-assisted diagnosis revealed an average prevalence of mental illness of about 42%.⁴ The high rates of missed diagnoses of psychiatric disorders in general health facilities due to low suspicion of mental illness among patients seen is similar to findings from other countries^{3,4,7,17,24,25} and therefore this may result in undermining their pivotal role in the diagnosis and management of patients with mental illness.¹⁻⁴

As expected, the referral rate was lower than the suspicion that patients could be presenting with psychiatric symptoms. These findings suggest that there is a low level of awareness of mental illness among hospital staff due to lack of knowledge⁵, that are inevitably missed therefore leading to unmanaged mental disorders which in turn would adversely affect the outcome of the physical conditions. However from the overall results, the non-psychiatric staff from these general facilities referred patients for psychiatric evaluation and treatment on suspicion that the psychiatric symptoms presenting could be pointing to a psychiatric disorder ($p=0.001$). The missed diagnosis by the non-psychiatric health workers in these general facilities could also have been due to the negative stereotypes and stigmatizing attitudes towards mentally ill persons as reported in other studies.⁶⁻¹¹ These results reaffirm the findings by Muga and Jenkins⁸ which indicated that non-psychiatric staff in general health facilities preferred psychiatrists handling mentally ill persons even if they were capable of treating these patients.

Attitude of staff on who should and where to manage mental illness

The findings that a large proportion of the staff believes that patients with mental illness can be handled by non-psychiatric doctors and outside the psychiatric hospital point to the need for continuing medical education (CME). This has been suggested elsewhere.⁹

However a few non-psychiatric staff still believed that mental illness was a problem of relatives (1.7%) and another 2.6% believed that mental illnesses were best managed by witchdoctors. This societal stereotyped negative belief towards mental illness, held by a few non-psychiatric staff, has also been found in other studies.¹⁰⁻¹⁴ This may explain why fewer staff thought that non-psychiatric staff had no role to play in the management of psychiatric problems or non-psychiatric health facilities do not have a role in managing mental illness. This is a back drop seen in other studies despite the majority of non-psychiatric health workers' understanding of biological and environmental factors in the causation of mental illness.¹⁵⁻¹⁷

KAP on mental illness and stigma toward depression

The wide variations in the levels of knowledge on mental illness are a reflection of different inputs in training. The administrators, although they may not be involved in clinical work and were few in the study sites, are in charge of policy decisions which in turn affects the practices followed within their areas of administration. They therefore constitute a vital target for CME because they are in a position to lobby for the allocation of more mental health resources, to determine the facilitation of CME in their facilities, and know who and how many attend such courses. On most of the dimensions, "uncertain" response was recorded on various aspects of knowledge on mental illness, suggesting that "having knowledge of mental illness by primary health care workers does not always reduce the associated stigma."⁷ This is shown by the negative significant correlation between stigma towards people with mental disorders and the staff being aware that people with depression cannot break down at any time, and are not weak or dangerous (Table VIII). Meaning therefore that despite the staff's knowledge on recognition, diagnosis and treatment of mental disorders, the staff maintain their cultural views of mental illness.¹³ The observation that there was a disparity between knowledge about mental disorders (dimension (i)) and knowledge in psychiatry in general (dimension (v)) would suggest that these personnel were not exposed to the experience of managing psychiatric conditions.

Although doctors and nurses least stigmatised depression compared with other professionals except clinical officers (Table V) they, between them, make most decisions on management of patients with depression on a day-to-day basis. The more than 50% "uncertain" response in all but one profession again suggests a potential for CME in changing attitudes. The finding that older doctors were more knowledgeable about mental disorders, a finding that has been reported elsewhere¹⁰, implied that they made use of their experience. Older doctors who were probably more senior in their professional careers appeared to be much less stigmatising than younger doctors – this is corroborated by the findings of a study in a London teaching hospital.¹¹ However, there is still a significant level of "uncertain" and "unaware" responses across all professionals and across all ages to justify CME for all professionals regardless of their age.

Conclusion

This study adds to the global knowledge on this subject, providing data from an African developing country. Several conclusions can be drawn from this study, the most important being a generally positive attitude towards mental illness and depression, particularly amongst the staff studied. This can be inferred from responses to the various questions, and also from the interest shown in the study through high response rates across disciplines. However this generally positive attitude is hampered by lack of knowledge on the subject, a conclusion based on the high rates of "uncertain" or "unaware" responses. Generally these findings cut across all the professional backgrounds and age groups.

This study therefore provides evidence for the high

potential for CME related to mental health for all professionals regardless of their age, working in general medical facilities in Kenya and by extension other socio-economically similar African countries. The acquired knowledge²⁷⁻³⁰ sets up a base for health workers to provide evidence based medical services that eventually contribute to the advancement of knowledge in the treatment and prevention of mental health disorders in general health facilities. In this context therefore, health workers are strongly motivated as they use the acquired knowledge and skills imparted during training (CME) in mental health to provide interventions that profoundly improve the effectiveness of their medical care services. There is a high prevalence of mental disorders (and in particular depression) found in the general facilities which go undiagnosed²³, specifically where there is lack of adequate numbers of psychiatrists.²⁶ This calls for integration of mental health training and service provision into primary health care services (training nurses in mental health services during their induction years in training) such that interventions that profoundly improve the effectiveness of medical care services can be provided. A special target for CME are the administrators, few as they may be as well as non-practising clinicians.

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References

1. Thompson L, Thomas R. Teaching psychiatry to primary care internists. *Gen Hosp Psychiatry* 1985; 7:210-213
2. Regier A, Narrow WE, Rae S, Manderscheid W, Locke Z, Goodwin K. The de facto US mental and addictive disorders service system: Epidemiologic Catchment Area prospective 1-year prevalence rates of disorders and services. *Arch Gen Psychiatry* 1993; 50:85-94
3. Hartley D, Korsea N, Bird D, Agger M. Management of patients with depression by rural primary care practitioners. *Arch Fam Med* 1998; 7:139-145
4. Jones R, Parlour R. The psychiatric role of the rural primary care practitioner, in *Psychiatric Services for Underserved Rural Populations*. New York, Brunner/Mazel. 1985; pp 92-102
5. Lappalainen-Lehto R, Seppa K, Nordback I. Cutting down substance abuse: present state and vision among surgeons and nurses. *Addictive Behaviour* 2005; 30: (5)1013-1018.
6. Aydin N Yigit A, Inandi T Kirpinar I. Attitudes of hospital staff toward mentally ill patients in a teaching hospital in Turkey. *International Journal of Social Psychiatry* 2003; 49 (1):17-26.
7. Schulze B. Stigma and mental health professionals: a review of the evidence on an intricate relationship. *International Review of Psychiatry* 2007; 19 (2):137-155.
8. Muga FA, Jenkins R. Training, attitude and practice of district health workers in Kenya. *Soc Psychiatry Psychiatr Epidemiol* 2008; 43:477-482.
9. Wolf G, Soumtra P, Craig T, Leff J. Community attitudes to mental illness. *Br J Psychiatry* 1996; 168:183-190.
10. Ewruhudjakpor C. Knowledge, beliefs and attitudes of health care providers towards the mentally ill in Delta State, Nigeria. *Ethno Med* 2009; 3:19-25.
11. Gureje O, Lasebikan V, Oluwanuga OE, Olley BO, Kola L. Community study of knowledge and attitude to mental illness in Nigeria. *Br J Psychiatry* 2005; 186: 436-441. doi: 10.1192/bjp.186.5.436.
12. Murray CJL, Lopez AD, (Eds): *Global Burden of Disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020 (The Global Burden of Disease and Injury)*. Harvard School of Public Health; 1996.
13. Shepherd S. They're possessed? Cultural views of mental illness. <http://www.medhunters.com/articles/theyrePossessed.html?hec=>
14. Crisp AH, Gelder MG, Rix S, Meltzer HI, Rowlands OJ. Stigmatisation of people with mental illness. *Br J Psychiatry* 2000; 177: 4-7.
15. Thiru GS, Yad MJ. Are mental health professionals immune to stigmatizing beliefs? *Psychiatr Serv* 2005; 56:610.
16. Salter M, Byrne P. The stigma of mental illness: how you can use the media to reduce it. *Psychiatr Bull* 2000; 24:281-283.
17. Sherman P. Stigma, mental illness, and culture. <http://www.scribd.com/doc/11731670/The-Stigma-of-mental-Illness>
18. Evenhuis H, Henderson CM, Beange H, Lennox N, Chicoine B. *Healthy Ageing - Adults with Intellectual Disabilities*. Physical Health Issues. World Health Organization: Geneva, Switzerland, 2000.
19. Puskar KR, Bernardo L. Trends in mental health: implications for advanced practice nurses. *Journal of the American Academy of Nurse Practitioners* 2002; 14 (5): 214-218.
20. Green C A, Fenn D S, Moussaoui D, Kadri N, Hoffman WF. Quality of life in treated and never-treated schizophrenic patients. *Acta Psychiatrica Scandinavica* 2001; 103 (2): 131-142.
21. Kingdon D, Sharma T, Hart D. The Schizophrenia Subgroup of the Royal College of Psychiatrists' Changing Minds Campaign: What attitudes do psychiatrists hold towards people with mental illness? *Psychiatric Bulletin* 2004; 28: 401-406.
22. Mukherjee R, Fialho A, Wijetunge A, Checinski K, Surgenor T. The stigmatisation of psychiatric illness: the attitudes of medical students and doctors in a London teaching hospital. *Psychiatric Bulletin* 2002; 26:178-181.
23. Ndeti DM, Khasakhala L, Kuria M, Mutiso V, Ongecha FA, Kokonya D. The Prevalence of Mental Disorders in Adults in Different Level General Medical Facilities in Kenya. A Cross-Sectional Study. *Annals of General Psychiatry* 2009; 8:1. Available online at <http://www.annals-general-psychiatry.com/content/8/1/1>
24. Mayou R, Smith EBO. Hospital doctors' management of psychological problems. *British Journal of Psychiatry* 1986; 148:194-197.
25. Morgan J F, Killoughery M. Hospital doctors' management of psychological problems - Mayou & Smith revisited. *British Journal of Psychiatry* 2001; 182:153-157.
26. Ndeti D M, Ongecha F A, Mutiso V, Kuria M, Khasakhala LI, Kokonya D A. The challenges of human resources in mental health in Kenya. *South African Psychiatry Review* 2007; 10:33-36.
27. Drake R E, Goldman H, Left H S, Lehman AE, Dixon L, Mueser KT, et al. Implementing evidence-based practices in routine mental health service settings. *Psychiatric Services* 2001; 52: 179-182.
28. Egger M, Smith GD, O'Rourke K. Rationale, potentials, and promise of systematic reviews. In M. Egger, G. D. Smith, & D. G. Altman (Eds.), *Systematic reviews in health care: Meta-analysis in context* (2nd ed., pp. 3-19). London: BMJ Books. 2001
29. Gambrill E. Evidence-based practice and policy: Choices ahead. *Research on Social Work Practice* 2006; 16: 338-357.
30. Hoagwood K, Burns BJ, Kiser L, Ringeisen H, Schoenwald S K. Evidence-based practice in child and adolescent mental health services. *Psychiatric Services* 2001; 52: 1179-1189.