

## Article

# Patient characteristics that may predict the likelihood of the presence of mental health problems in patients attending the general outpatient clinic of a tertiary hospital in South-South Nigeria

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## ABSTRACT

**Background** A considerable number of patients seen in general outpatient clinics (GOPC) are known to suffer from psychiatric rather than physical disorders. Studies have shown that doctors working in these clinics have difficulty in making accurate ratings of mental health problems in their patients and have poor knowledge of psychiatric diagnosis. Accurate recognition of psychiatric symptoms in a patient is essential for specific diagnosis and successful management. There is a need for the use of an easy tool such as the 12-item General Health Questionnaire (GHQ-12) for screening and identification of psychopathologies especially in a busy clinic setting like the GOPC. Aside from psychometric screening tools, patients' sociodemographic characteristics such as gender, age, marital status, occupation,

education etc. have been found to be of value in predicting those at risk.

**Objectives** This study seeks to correlate GHQ 'caseness' with sociodemographic factors and to compare physician diagnosis with GHQ diagnosis.

**Subjects and method** Three-hundred and twenty-two respondents were recruited for the study by a systematic random sampling method. Using a cut off score of three on both the English and Efik translation versions of the GHQ-12, 'cases' and 'non-cases' generated were compared with the same classification as identified by the GOPC doctors. Identification rates for both groups were calculated and the coefficients determined using a two-by-two contingency table. Sociodemographic correlates were determined by statistical comparison of the classifications in both groups.

**Results** Statistically significant differences in sociodemographic characteristics of respondents were found for age ( $\chi^2=48.97$ ;  $P < 0.05$ ) and education ( $\chi^2=45.64$ ;  $P=0.05$ ) using their GHQ-12 scores, and for occupation ( $\chi^2=37.90$ ;  $P < 0.05$ ) among those seen by the GOPC doctors. A further comparison of identified 'cases' and 'non-cases' by doctors again revealed significant difference for age ( $\chi^2=7.151$ ;  $P < 0.05$ ). Sex as a socio-demographic characteristic showed no statistically significant difference though a greater percentage of females (57.3%) were observed as 'high scorers' as compared to their male counterparts (42.7%). The GHQ-12 identified 46.6% 'cases' while the GOPC doctors identified 6.8% among the attendees with a diagnostic sensitivity of 8% and a specificity of 94%, respectively.

**Conclusion** Belonging to the 18–39 years age group, being employed and having less than 12

years of education were the patients' characteristics that suggested the likelihood of the presence of mental health problems.

This study also revealed that despite the high proportion of psychiatric morbidity (46.6%) in the GOPC of the University of Calabar Teaching Hospital (UCTH) rate of detection by the clinic doctors was low (6.8%).

It is recommended that primary care doctors should be alerted to the possibility that clinically significant psychiatric morbidity may be present in GOPC attendees. The correlation between patients' sociodemographic parameters and presence of mental health problems could be informative and should be given adequate attention during consultation.

**Keywords:** mental health, patient characteristics, primary care clinic

## Background

Globally the prevalence of disabilities caused by mental illnesses varies between almost 12% in Israel<sup>1</sup> and about 45% in Nigeria.<sup>2</sup> By the year 2020, depression (one of the commonest psychiatric problems in the primary care setting) will be the leading cause of disability and premature death in the world.<sup>3</sup> Although approximately 20% of consultations with primary care doctors have been attributed to psychiatric disorders<sup>4</sup> only a small fraction (5–10%) of the total psychiatric morbidity in a community is seen in psychiatric hospitals or clinics;<sup>3</sup> the remaining 90–95% of the mentally ill present to primary care physicians, and in Nigeria also to traditional and faith healers.<sup>5</sup>

Despite this, a substantial number of such patients pass undetected in the primary care settings.<sup>3,4,6,7</sup> On average, about 60% of mental health problems in the primary care or general practice setting go unnoticed.<sup>4</sup> A study found that the proportion of detection of psychiatric cases by primary care physicians was about 24%, as compared to the 69% of probable cases detected by psychiatrists in the same study.<sup>8</sup>

The type and range of psychiatric morbidity seen in primary healthcare settings make psychiatric assessment procedures there a special problem distinct from that encountered in specialist settings.<sup>2</sup> About a third of patients presenting in primary care facilities often confront the clinicians working at this level with subthreshold disorders featuring a confusing blend of psychological and physical

symptoms.<sup>3</sup> This calls for an approach that will facilitate quick assessment of each patient. Araya, Wynn, Leonard and Lewis posited that psychiatric screening tools such as the GHQ-12 may be used in primary healthcare settings to heighten suspicion of the presence of psychological disorders and make it easier for primary care physicians to identify which cases may qualify as psychiatric.<sup>5</sup> To further buttress this submission, a recent Nigerian study has shown that feedback of GHQ-12 scores in the post-intervention phase led to an increase in the proportion of psychiatric morbidity detected by clinic doctors, as evidenced by increases in psychotropic drug prescription, number of diagnoses made and also in the number of psychiatric referrals made by the doctors.<sup>9</sup> Use of the GHQ-12 as a screening tool in the primary care setting will not only help in case detection, but will reduce to some extent problems of recurrent consultation, unwarranted investigations, inappropriate referrals or treatments and chronicity of symptoms. The GHQ-12 is user friendly, affordable, available, effective and can easily be used even in a busy clinic. Studies in Nigeria have demonstrated that it has acceptable sensitivity of 83.7% and specificity of 79.8%.<sup>2,8,9</sup> The GHQ-12 has been demonstrated in many studies to have a high correlation coefficient with standardised psychiatric assessment instruments including the Present State Examination and the Clinical Interview Schedule.<sup>8</sup>

A few studies have examined the relationship of specific disorders at the primary health care level to sociodemographic features of the patients. Generally speaking, knowledge of the sociodemographic characteristics of a patient in a particular setting is

believed to predict to some extent the likelihood of the presence of a mental health problem in him or her. The effects of sociodemographic variables like gender, age, marital status, occupation, education and others tend to vary with different studies, with some obtaining statistically significant differences in some of these variables. For instance, while some authors are of the opinion that females have an increased predisposition to developing psychiatric morbidity when compared to males,<sup>3,7,9</sup> some have rather reported increased morbidity in the male gender.<sup>10,11</sup>

Some other factors have been identified as being associated with low rates of identification of psychiatric cases. These include inadequate undergraduate and postgraduate training in psychiatry<sup>12</sup> as well as age and gender of the general practitioner.<sup>13</sup> Continuing Medical Education (CME) has also been demonstrated to improve the detection of mental illness by the primary care doctors.<sup>14</sup> Probably using patients' characteristics and demographic variables of the patients may suggest or predict the likelihood of the presence of mental health problems in them, thereby increasing mental health identification by primary care doctors.

This study set out to correlate GHQ caseness with sociodemographic factors of respondents and to compare physicians' diagnosis with GHQ diagnosis. It is hoped that this will boost the primary care physician's ability to detect mental health caseness among the consultees.

## Materials and methods

The cross-sectional, descriptive, one-stage design study was carried out in the UCTH, a tertiary institution and the largest public health facility in Calabar, the capital city of Cross River State (CRS), Nigeria. The GOPC where this study was conducted is run by a 14-man team of doctors including consultant family physicians, serves as the 'gateway' to the hospital and offers primary medical care services. A 'walk in' policy operates and no referrals are required before patients are attended to. Patients from diverse ethnic and varied educational backgrounds visit this clinic for various health reasons. The study population included those first-time attending out-patients who met the selection criteria.

The GHQ-12, a standardised psychiatric screening tool recommended by the WHO for use in the primary care setting for detection of mental illness among patients, was administered to the subjects while summary forms were also used by the clinic doctors to indicate the presence or absence of men-

tal illness in respondents. The design of the summary form included various categories of patient health status as follows: 1) no physical or mental illness; 2) physical illness only; 3) mental illness only; 4) mixture of physical and mental illnesses; 5) physical illness present, doubtful whether mental illness present; 6) mental illness present, doubtful whether physical illness present; and 7) not sure whether physical or mental illness present.

The GOPC doctor was issued a summary form immediately after consulting a study subject. The essence was for the doctor to indicate the presence or absence of mental illness in the respondent.

For the purpose of this work, a translated, Efik version of the GHQ-12 was also made available. The GHQ-12, as well as the consent form, was translated from English (the source language) into Efik (the target language) using the protocol recommended by cross-cultural researchers in the field of translation which includes:<sup>15-17</sup>

- translation by a team of bilinguals
- assessment of clarity and equivalence
- back-translation to the original language
- pilot-testing on both monolinguals and bilinguals.

Three-hundred and twenty-two consenting adult patients aged 18 years and above attending the clinic for the first time were chosen, after an informed consent, using systematic random sampling. By this method, individuals were chosen at regular intervals from the sampling frame following a simple random selection of the first subject. The sample interval was 18 and was expressed as a sampling fraction of one in 18. The first individual for the sample was chosen by simple random sampling which was done by blindly picking one out of 18 pieces of paper numbered one to 18. This individual represented the index subject for the study, and then every 18th subject was included in the sample frame thereafter until the desired sample size was realised.

The study was conducted between September and December 2008. Patients who were too ill to withstand the rigours of the interview were excluded.

A pilot study was conducted to assess respondents' understanding and acceptance of the two versions of the GHQ-12 questionnaire and also to correct mistakes. All possible measures were undertaken to ensure confidentiality. On average, each interview took about ten minutes. After the completion of the GHQ-12, the subject was, like any other regular patient, allowed to see any of the clinic doctors. Immediately after a study subject was seen, the attending physician was requested by the author to tick just one of the health status options in the summary form for the candidate. The attending physicians were oblivious to the subjects selected for the study, the reason being avoidance of bias.

The raw data was pre-coded and, to ensure accuracy, double entered into the Statistical Package for Social Sciences (SPSS) Version 11.0 software. Frequencies and percentages of relevant variables were determined along with the frequencies of scores on the GHQ-12 and their means. For the purpose of this study and as recommended by Tim Croudace *et al*,<sup>18</sup> a cut-off point of three and above was used to distinguish possible cases from non-cases, thus forming two score bands. Those scoring three and above ( $\geq 3$ ) were designated probable 'cases' and belonged to one score band while those scoring zero to two (0–2) were labelled 'non-cases' and formed the second score band.

Relevant statistical tools were used to treat categorical and continuous data respectively and to demonstrate the relationship between the health status and the GHQ-12 score of respondents. *P*-value of less than 0.05 was used to determine the level of statistically significant difference.

## Results

Table 1 shows the detailed profile of demographic characteristics of all respondents in the study. A total of 322 respondents were entered into the study. Mean age of respondents was 35.93 (SD 13.4). There was a preponderance of respondents aged between 18 and 39 years in the study. Out of the 322 respondents, 178 (55.3%) were females, 155 (48.1%) were married, 158 (49.1%) had less than 12 years of education and 117 (36.3%) were self-employed. Because Calabar is predominantly a Christian city, the negligible number of Muslim respondents could be understood.

Two score bands were generated using a cut-off point of three. Table 2 shows the analysis of the GHQ-12 scores in 'High' and 'Low' score bands for all demographic characteristics. The mean score for all respondents in the study was 2.71 (SD 2.4). The GHQ-12 thus identified 46.6% of the respondents as possible 'cases' while 53.4% met the 'non-case' criteria. In both score bands, there was a preponderance of those aged between 18 and 39 years, female respondents, married individuals, those with less than 12 years of education and the self-employed, while there was a negligible number of Muslim respondents because Calabar is predominantly a Christian city.

A general cross-tabulation of the GOPC doctors' perception of psychiatric illness and detection by the use of the GHQ-12 instrument against demographic characteristics for all respondents in the study is presented in Table 3. Significant differences

**Table 1** Demographic characteristics of all respondents in the study

Characteristics	Frequency <i>n</i> =322	Percentage
Age groups		
18–39	215	66.8
40–59	82	25.5
$\geq 60$	25	7.7
Sex		
Female	178	55.3
Male	144	44.7
Marital status		
Single	129	40.0
Married	155	48.0
Separated	10	3.0
Divorced	2	0.6
Widowed	26	8.4
Level of education		
No education	28	8.7
<12 years of education	158	49.1
>12 years of education	136	42.2
Religion		
Christian	318	98.8
Muslim	4	1.2
Occupation		
Student	65	20.2
Unemployed	47	14.6
Self-employed	117	36.3
Employed	93	28.9

in sociodemographic characteristics of all respondents were found for occupation ( $\chi^2=37.90$ ;  $P < 0.05$ ) among those seen by the GOPC doctors, and for age ( $\chi^2=48.97$ ;  $P < 0.05$ ) and education ( $\chi^2=45.64$ ;  $P < 0.05$ ) using their GHQ scores. This shows that the burden of psychological distress was more evident among respondents within these sociodemographic parameters.

A comparison of demographic characteristics of identified possible psychiatric 'cases' and 'non-cases' detected by the GOPC doctors is shown in Table 4. This was done by subjecting the data to a non-parametric test of statistical significance (likelihood chi-square ratio). A statistically significant difference was seen in the age group parameter. It was observed that the younger respondents aged between 18 and 39 years had the highest frequencies of identified 'cases' (12 (54.55%)) and 'non cases'

**Table 2** GHQ-12 score analysis for all demographic characteristics

Characteristics	High scorers ( $\geq 3$ ) <i>n</i> =150 (46.6%)	Low scorers (0–2) <i>n</i> =172 (53.4%)
Age group		
18–39	98 (65.3)	117 (68.0)
40–59	38 (25.3)	44 (25.6)
$\geq 60$	14 (9.3)	11 (6.4)
Sex		
Female	86 (57.3)	92 (53.5)
Male	64 (42.7)	80 (46.5)
Marital status		
Single	56 (37.3)	73 (42.4)
Married	74 (49.3)	81 (47.1)
Separated	7 (4.7)	3 (1.7)
Divorced	1 (0.7)	1 (0.6)
Widowed	12 (8.0)	14 (8.1)
Level of education		
No education	18 (12.0)	10 (5.8)
<12 years of education	71 (47.3)	87 (50.6)
>12 years of education	61 (40.7)	75 (43.6)
Religion		
Christian	148 (98.7)	170 (98.8)
Muslim	2 (1.3)	2 (1.2)
Occupation		
Student	27 (18.0)	38 (22.1)
Unemployed	22 (14.7)	25 (14.5)
Self-employed	59 (39.3)	58 (33.7)
Employed	42 (28.0)	51 (29.7)
Mean score (SD)	4.78 (1.86)	0.91 (0.84)

(203 (67.67%)) with a likelihood chi-square ratio of 7.151,  $df=2$  and a *P*-value of 0.028, suggesting that a statistically significant difference exists between the identified 'cases' and identified 'non-cases'. No significant difference was observed in any other demographic parameter.

The skill of the GOPC doctors in detecting the presence of psychiatric morbidity or co-morbidity among respondents in the study as compared with detection using a standardised instrument like the GHQ-12 is shown in Table 5. It can be seen that among the 'low scorers' on the GHQ-12, a total of ten respondents were detected while a total of 12 were detected among the 'high scorers'. In all, a total of 22 respondents with psychiatric morbidity were

detected representing 6.8% of the total study population. Further analysis to examine these findings in terms of diagnostic ability of the doctors using a two-by-two contingency table showed that 10 of the 22 identified cases were actually non-cases (false positive).

## Discussion

Significant differences in sociodemographic characteristics of all respondents were found for age group ( $\chi^2=48.97$ ;  $P < 0.05$ ) and education ( $\chi^2=45.64$ ;  $P = 0.05$ ) using their GHQ scores (Table 3), and also for occupation ( $\chi^2=37.90$ ;  $P < 0.05$ ) among those seen by the GOPC doctors. Further effort to explore the sociodemographic correlates of 'cases' involved the comparison of the demographic characteristics of both 'cases' and 'non-cases' as identified by doctors and GHQ scores (Table 4). Significant difference in sociodemographic characteristics of respondents was again found for age group ( $\chi^2=7.151$ ;  $P < 0.05$ ).

There was a preponderance of younger people (aged from 18 to 39 years) among those classified as 'cases' by both the GHQ-12 screening tool and the clinic doctors' assessment. This was consistent with the findings of Adeyemi *et al* and Niaz *et al* while contradicting Gureje *et al* and Cooper *et al*, who reported that increasing age was associated with morbidity.<sup>8,19–21</sup> The findings in this study could be a reflection of the underdevelopments in our society, where ignorance, poverty, malnutrition and disease thrive with concomitant effect on longevity. Also the movement of young people to urban areas results in a higher utilisation of the clinics by this age group, while the older people remain in the villages to patronise the services of traditional healers.

Another significant difference in sociodemographic characteristic of respondents for level of education on GHQ-12 screening was observed in this study. Psychiatric morbidity was greater in those with less than 12 years of education. This is in line with the findings of some authors who have cited that psychiatric morbidity was more common in those of a low educational level, perhaps because of their inability to express their feelings and because they have fewer strategies to help them cope with their problems.<sup>7</sup> A study in a Nigerian general hospital also revealed that there was an inverse relationship between the level of education and psychiatric morbidity.<sup>22</sup> However, Adamson and Sijuwola, in a Nigerian study using the GHQ-12, found no significant difference for age and education.<sup>10</sup> It is believed that such disparity could be accounted for by differences in methodology and settings.

**Table 3** Cross-tabulation of doctors' perception of psychiatric illness and GHQ-12 detection against demographic characteristics ( $n=322$ )

Demographic characteristics	Doctors' perception		GHQ detection	
	$\chi^2$	$P$	$\chi^2$	$P$
Age group	14.83	0.251	48.79	0.002*
Sex	6.95	0.325	12.79	0.384
Marital status	19.28	0.737	62.97	0.072
Educational status	11.33	0.501	45.64	0.005*
Religion	0.51	0.998	3.32	0.993
Occupation	37.90	0.004*	29.87	0.754

\* Significant difference

**Table 4** Comparison of demographic characteristics of cases and non cases detected by the GOPC doctors ( $n=322$ )

	Identified cases $n=22$ (%)	Identified non-cases $n=300$ (%)	Stat. $\chi^2$	$P$
Age group in years				
18–39	12 (54.55)	203 (67.67)		
40–59	10 (45.45)	72 (24.00)	7.151	0.028*
≥60	0	25 (8.33)		
Sex				
Male	14 (63.64)	130 (43.33)	2.634	0.105
Female	8 (36.36)	170 (56.67)		
Marital status				
Single	9 (40.91)	120 (40.00)		
Married	10 (45.46)	145 (48.33)	8.878	0.064
Separated	3 (13.64)	7 (2.33)		
Divorced	0	2 (0.67)		
Widowed	0	26 (8.67)		
Education				
No education	1 (4.55)	27 (9.00)		
<12 years	8 (36.36)	150 (50.00)	2.833	0.243
>12 years	13 (59.09)	123 (41.00)		
Occupation				
Student	2 (9.09)	63 (21.00)		
Unemployed	5 (22.73)	42 (14.00)	3.276	0.351
Self-employed	7 (31.82)	110 (36.67)		
Employed	8 (36.36)	85 (28.33)		

N.B. For cells that have expected values of less than five, the likelihood-ratio chi-square or Yates's correction (for two-by-two contingency table only) was used

**Table 5** Detection of psychiatric morbidity in respondents by GOPC doctors compared with GHQ-12 rating ( $n=322$ )

Health status	Score bands		Total
	Low scorers	High scorers	
	Frequency (%)	Frequency (%)	Frequency (%)
No mental or physical illness	5 (1.55)	2 (0.62)	7 (2.17)
Physical illness only	151 (46.89)	135 (41.93)	286 (88.82)
Mental illness only	0 (0)	1* (0.31)	1 (0.31)
Mixture of physical and mental illness	9* (2.80)	8* (2.49)	17 (5.29)
Physical illness present: doubtful whether mental illness present	4 (1.24)	1 (0.31)	5 (1.55)
Mental illness present: doubtful whether physical illness present	1* (0.31)	3* (0.93)	4 (1.24)
Not sure whether physical or mental illness present	2 (0.62)	0 (0)	2 (0.62)
Total	172 (53.41)	150 (46.59)	332 (100%)

\* Identified mental illness = 22

Interestingly, the employed showed statistically significant difference in doctor's detection as opposed to the findings of many researchers who reported that unemployment is known to predispose to psychological distress.<sup>7,10</sup> Ngoma *et al* asserted that being employed did not result in any statistical significant difference in their study.<sup>23</sup> There was no statistically significant difference when occupation as a sociodemographic variable was viewed on the GHQ screen. In view of the preponderance of the employed as rated by the clinic doctors in this study, one can speculate that CRS in the local parlance is known as a 'civil service state' because the state civil servants form the majority of the state workforce. CRS civil servants are said to be the lowest paid in the country, probably because of high pay as you earn (PAYE) tax, the mandatory State Urban Development Levy and the low minimum wage. As such, a civil servant in CRS state takes home very little at the end of the month and can hardly meet his/her financial burden. They bear the brunt of economic depression in the society. More work is required to confirm this observation.

In this study, it was evident that sex as a socio-demographic characteristic showed no statistically significant difference though a greater percentage of females (57.3%) were observed as 'high scorers' as compared to their male (42.7%) counterparts. This contradicts the study of several researchers who

found statistically significant differences in sex as a sociodemographic variable.<sup>4,7,24</sup> In these studies, there was a female to male preponderance. The reasons for this sex differential are poorly understood. Possible explanations for female preponderance in the majority of studies were linked with genetic predisposition, hormonal factors, gender difference in illness behavior, role conflicts and domestic/workplace overload.<sup>21</sup>

Though there was no statistical significant difference in marital status in this study, there was a preponderance of psychiatric 'caseness' among the married in doctors' detection when compared to the single, separated, divorced or widowed. This is comparable to the finding of Niaz *et al* in Pakistan<sup>21</sup> but contrary to the report of several investigators who observed that those who were separated, divorced or widowed have more likelihood of being identified as 'cases'.<sup>8,24</sup> Ngoma *et al* reported that being married was not associated with morbidity in his studies.<sup>23</sup> Possible explanation for the observation in this study could be linked to very early marriage, infertility, hostile in-laws, inadequate finance to meet family needs, family disharmony and lack of an intimate and confiding relationship with spouse.<sup>24,25</sup> On the whole, it is very likely that sociocultural differences between settings may be responsible for these discrepancies.

On the whole, apart from history taking and examination, a little more attention to demographic variables of the patients consulting the primary care physicians may suggest or predict the likelihood of the presence of mental health problems in these clients.

## Conclusion and recommendations

This study revealed that despite the high proportion of psychiatric morbidity (46.6%) in the GOPC of the UCTH the detection rate of the clinic doctors was low (6.8%). Being in the 18 to 39 years age group of, being employed and having less than 12 years of education were the patient characteristics that suggested the likelihood of the presence of mental health problems.

It is recommended that primary care doctors should be alerted to the possibility that clinically significant psychiatric morbidity may be present in GOPC attendees. This could be anticipated by noting patients' characteristics.

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#### CONFLICTS OF INTEREST

None.

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