Original Article

Use of the General Health Questionnaire as a screening tool for Geriatric Patients in Calabar, Nigeria

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ABSTRACT

BACKGROUND

Old age is inevitably associated with general biological and physical decline.Mental health issues are among the most prevalent health problems of the elderly and constitute an important source of distress for patients and caregivers. Primary care providers frequently fail to diagnose these problems, and, even when they do, management may not be optimal. This study aimed to determine the proportion of geriatric mental health morbidity detected by Family Physicians and compare this with General Health Questionnaire detection in the recognition of morbidity in this cohort.

METHOD: This was a cross-sectional descriptive survey involving 107 elderly respondents, conveniently recruited for the study from the Family Medicine Geriatric Clinic of the University of Calabar Teaching Hospital, Calabar. Respondents were grouped into 'cases' and 'non-cases' using a cut-off score of '3' with the General Health Questionnaire as the main comparative detection instrument. Family Physicians' abilities to identify mental health morbidity were then compared with the General Health Questionnaire ratings. Socio-demographic correlates and identification rates were determined by statistical tests of associations.

RESULTS: The General Health Questionnaire identified **48.6%** 'cases' while the Family Physicians identified **9.4%** among the attendees. Statistically significant differences in socio-demographic characteristics of respondents were found for **marital status**($X^2 = 21.84$; $p < 0.009$),**level of education**($X^2 = 42.58$; $p < 0.005$) and **sex**$X^2 = (6.98; p < 0.008)$.

CONCLUSION: This study concludes that using the General Health Questionnaire and paying attention to geriatrics' socio-demographic parameters can improve the detection of mental health morbidities in the elderlyby Family Physicians.

KEY WORDS: Care of the Elderly, Geriatric Mental Health, Family Physician

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INTRODUCTION

Old age is inevitably associated with general biological and physical decline.[1] Mental health issues are among the most prevalent health problems of the elderly and are an important source of distress for patients and caregivers, being also associated with significant growth in the costs and demand for provision of health care services.[2] Most developed countries have accepted the chronological age of 65 years as a definition of the 'elderly' or older person. Interestingly, this concept does not adapt well to the situation in Africa. While this definition is somewhat arbitrary, it is many times associated with the age at which one can begin to receive pension benefits. At the moment, there is no United Nations standard numerical criterion for defining the aged, but the UN's agreed take-off is 60+ years to refer to the older population.[3] The prevalence of mental health morbidity among the elderly as reported in different settings[4,5,6,7] worldwide vary from 60%(United Kingdom) to 21.1% (Nigeria). These disorders include but are not limited to: depression, sleep disorders, cognitive impairment, dementia, suicide and late-life schizophrenia. Most elderly persons with mental illness never seek medical attention and treatment for their conditions due to stigmatization.[8,9]

Family Physicians and General Practitioners (GPs) form the bulk of Primary Care Physicians caring for geriatric patients in Nigeria. They frequently experience difficulties when detectingthese Mental Health problems, and, even when they do, management may not be optimal. Epidemiological studies reported by Araya et al and Uwakwe, showed that detection by general practitioners was 14%,while the prevalence of mental illness was 33.2% and 53% respectively.[10,11]Undetected mental health problems of the elderly by Primary Care Physicians pose challenges to the health sector. Some of the consequences of non-recognition include: recurrent consultation, unwarranted investigations, inappropriate referrals or treatments, chronicity of symptoms, unresolved health problems, dependency, societal isolation and worsening of physical illness.[12,13,14]In cultures with prevailing belief systems on spiritual causes of mental problems, this will re-enforce their traditional beliefs in causation of illness.[15-17]

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The General Health Questionnaire-12 (GHQ-12) heightens the level of suspicion and increases the rate of identification of mental health morbidity.[12,13,15] The GHQ-12 is probably the most widely used mental health screening instrument in primary health care settings.[15,17] It is a self or interviewer-administered screening tool. It is certainly the most intensely studied questionnaire of its kind and has been translated into over 38 languages.[18,19]

Studies in Nigeria have demonstrated that it has acceptable sensitivity of 83.7% and specificity of 79.8%.[12,18,19] The GHQ-12 is very rapidly administered (510 minutes) and scored as it contains only twelve (12) questions. The symptoms rating are added up to a score, which indicates the overall severity.This was used to judge whether the patient should be described as a '*case'* or a '*non-case*'.

This study was designed with the aim of determining the proportion of mental health morbidity among geriatric patients aged 60 years and above and also to compare physician diagnosis with GHQ-12 diagnosis in the recognition of morbidity in this cohort. The study thus proposed that primary care physicians would identify more mental health problems in the elderly if their level of suspicion were heightened through feedback of GHQ-12 scores. This report should raise the awareness of mental health care delivery issues among Family Physicians and other Primary Care Physicians.

METHODS

This study was conducted in the Family Medicine Geriatric Clinic of the University of Calabar Teaching Hospital (UCTH), Calabar, located in the Niger Delta Region of Nigeria. Calabar is the capital city of Cross River State and is a fast growing city with an estimated total population of 371,022 comprising 186,607 males and 184,415 females.[20]The University of Calabar Teaching Hospital is a tertiary health care delivery institution and the largest public health care delivery facility in the State. The Clinic where this study was conducted offers primary geriatric medical care services, in that a "walk in" policy operates and no referrals are required before patients are attended to. Elderly patientsfrom diverse ethnic and varied educational backgrounds visit this clinic for various health reasons and it thus served as a good location for this study.

Instruments used for data collection were the Social-Demographic Questionnaire (SDQ), the General Health Questionnaire-Version 12 (GHQ-12) along with its "Efik" translation and the Summary Form. The SDQ provided information on respondents': age, sex, religion, occupation, marital status and education. The Summary Form is a structured questionnaire designed to include various categories of the patients' health status such as: (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.

To ensure validity, the GHQ-12 was translated from English (the source language) into "Efik" (the target language) as well as the consent form using the protocol recommended by cross cultural researchers in the field of translation.[21]

The design of this study was cross-sectional descriptive. A total of one hundred and seven (107)consenting elderly patients, aged 60 years and above seeking geriatric care in the UCTH Family Medicine Geriatric Clinic for the first time, over the three months' (July September 2007) study periodwere conveniently sampled for the study. Non-consenting patients,patients that were very ill or could not communicate coherently were automatically excluded from the study. All other accessible elderly subjects attending the geriatric clinic during the duration of the study were recruited.Each selected and consenting respondent was required to answer questions to complete the SDQ and then the GHQ-12 once he/she was entered into the study register. The English or "Efik" Versions of the GHQ-12 were administered to the respondents for completion depending on their language fluency and choice. On the average, each interview took about 10 minutes. The questionnaires were administeredby two out of the six authors (a Consultant Family Physician with special interest in psychiatry overseen by the Consultant Psychiatrist among the authors). After the completion of the SDQ and the GHQ-12 by a subject, each patient was allowed to see any of the Family Physicians just like any other regular patient. Immediately after a study subject was seen, the attending physician was requested by the researchers to tick only one of the health status options in the Summary Form for the subject. The attending physicians were blinded to avoid bias.

The data was analyzed using 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 Croudace et al,[19] a cut-off point of '3' and above was chosen.Those scoring '3' or above were regarded as 'high scorers' or 'cases', while those that scored below '3' (that is: 0-2) were referred to as 'low scorers' or 'non-cases'. Chi-square tables were used to analyze the relationship between demographic characteristics, the health statuses and the GHQ-12 scores of respondents. P-value of less than or equal to 0.05 was used as the level of statistically significant difference.

RESULTS

Table I shows demographic characteristics of the 107 respondents enrolled in the study.Their ages ranged from 60 to 81 years inclusive, with a mean of 76.8 ± 7.1 yrs. There was a preponderance of respondents aged 60-69 years in the study. Out of the 107 respondents, 63 (58.9%) were males, 75(70.1%) were married, 53(49.5%) hadPrimary education and 59(55.1%) were self-employed.

Table I: Demographic characteristics of all respondents in the study

Characteristics	Frequency N =107	Percentage
Age Groups in years		
60-69	66	61.7
70-79	32	29.9
≥80	9	8.4
Sex		
Female	44	41.1
Male	63	58.9
Marital Status		
Single	3	2.8
Married	75	70.1
Separated	5	4.7
Widowed	24	22.4
Level of Education		
No Education	23	21.5
Primary Education	53	49.5
Secondary Education and above	31	29.0
Occupation		
Unemployed	12	11.2
Self employed	59	55.1
Employed	36	33.6

In Table II, the mean score for all respondents in the study was2.96 ± 2.6. The GHQ-12 thus identified **48.6%** of the respondents as possible 'cases' while 51.4% met the 'non-cases' criteria. In both score bands (high scorers and low scorers), there was preponderance of those aged 60-69 years, female respondents, married individuals, those with Primary education and the self-employed.

Table II: GHQ -12 score analysis for all demographic characteristics

Characteristics	High scorers (e3) n=52 (48.6%)	Low scorers (0-2) n=55 (51.4%)
Age Group years		
60-69	32(61.5)	34(61.8)
70-79	15(28.8)	17(30.9)
≥80	5(9.6)	4(7.3)
Sex		
Female	33(63.5)	30(54.5)
Male	19(36.5)	25(45.5)
Marital status		
Single	0(0)	3(5.5)
Married	38(73.1)	37(67.3)
Separated	3(5.8)	2(3.6)
Widowed	11(21.2)	13(23.6)
Level of Education		
No Education	15(28.8)	8(14.5)
Primary Education	24(46.2)	29(52.7)
Secondary Education and above	13(25.0)	18(32.7)
Occupation		
Unemployed	7(13.5)	5(9.1)
Self employed	31(59.5)	28(50.9)
Employed	14(26.9)	22(40.0)
Mean score (SD)	5.10(2.06)	0.95(0.83)

In Table III, it can be seen that among the 'low scorers' on the GHQ-12, a total of five (5) respondents were detected while a total of five (5) were also detected among the 'high scorers'. In all, a total of ten (10) respondents with mental health morbidity were detected representing **9.4%** of the total study population.

Table III: Detection of Mental Health morbidity in respondents by Family Physicians compared with GHQ-12 rating (N=107)

Health Status	Score bands		Total
	Low scorers Frequency (%)	High scorers Frequency (%)	
No mental or physical illness	0 (0)	0(0)	0(0)
Physical illness only	50(46.7)	47(43.9)	97(90.6)
Mental illness only	0 (0)	1* (0.94)	1 (0.94)
Mixture of physical & mental illness	4* (3.75)	3* (2.80)	7 (6.55)
Physical illness present : Doubtful whether mental illness present	0 (0)	0(0)	0(0)
Mental illness present: Doubtful whether physical illness present	1* (0.0.94)	1* (0.94)	2 (1.88)
Not sure whether physical or mental illness present	0 (0)	0 (0)	(0)
TOTAL	55 (51.4)	52 (48.6)	107 (100%)

** Identified mental illness*

Table IV shows that significant differences in socio-demographic characteristics of all respondents were found for **marital status** ($X^2 = 21.84$; $P < 0.009$) among those seen by the Family Physicians, and for **education** ($X^2 = 42.58$; $P < 0.005$) using their GHQ scores.

Table IV: Cross-tabulation of doctors' perception of illness and GHQ-12 detection against demographic characteristics (N=107)

Demographic characteristics	Doctors perception		GHQ detection	
	X^2	p	X^2	p
Age group	2.74	0.841	27.22	0.203
Sex	7.60	0.055	17.59	0.092
Marital status	21.84	0.009*	23.09	0.901
Level of Education	10.11	0.129	42.58	0.005*
Occupation	3.44	0.752	32.10	0.076

** Significant difference*

Table V shows statistically significant differences in the **sex** and **marital status** parameters. The male respondents had the highest frequencies of identified 'cases' {8 (80%)}and 'non-cases' {36 (37.11%)}[x^2= 6.98,$p < 0.008$]. In the marital status parameter, the married respondents had the highest frequencies of identified 'cases' {7 (70%)}and 'non-cases' {68 (70.11%)}[x^2=13.18; $p < 0.004$].

Table V: Comparison of demographic characteristics of cases and non-cases detected by Family Physicians (N=107).

Characteristics	Identified Cases N=10	Identified Non-cases N =97	Stat. X^2	P
Age Group in years				
60-69	8 (80%)	58 (59.8%)		
70-79	2 (20%)	30 (30.9%)	2.725	0.256
e 80	0	9 (9.3%)		
Sex				
Male	8 (80%)	36 (37.11%)	6.98	0.008*
Female	2 (20%)	61 (62.89%)		
Marital status				
Single	0 (0)	3 (3.09%)		
Married	7 (70%)	68 (70.11%)	13.18	0.004*
Separated	3 (30%)	2 (2.06%)		
Divorced	0	0		
Widowed	0	24 (24.74%)		
Level ofEducation				
No education	0 (0)	23 (23.71%)		
Primary Education	7 (70%)	46 (47.42%)	5.35	0.069
Secondary Education and above	3 (30%)	28 (28.87%)		
Occupation				
Unemployed	1 (10%)	11 (11.34%)		
Self employed	4 (40%)	55 (56.70%)	1.29	0.524
Employed	5 (50%)	31 (31.96%)		

DISCUSSION

The proportion of high 'scorers' on the GHQ-12 screen using the recommended cut-off score of three (3) revealed that overall, **48.6%** of the total study population presented with mental health morbidity (Table II). This is in agreement with reports obtained from other studies: Ritchie et al recorded a prevalence of 46% among French elderly population.[4] Higher prevalence of 60% and 61% have been reported in India and Nigeria respectively.[6,7] Uwakwe had also reported a lower prevalence (23.1%) among the aged in some selected communities in Nigeria.[7] Generally speaking, the prevalence of mental health morbidity among the elderly as reported from different studies worldwide vary from 21.1% (Nigeria) to 60 % (United Kingdom).[2,4-7]

The Family Physicians in this study recognized the possibility of mental health morbidity in only ten (10) out of the one hundred and seven (107) respondents representing **9.4%** of the study subjects (Table III). The low detection rate in this study is not surprising when compared with detection rates reported by other workers. In the South East geopolitical zone of Nigeria, Uwakwe reported that the primary care physicians were only able to identify 2.8% of subjects with mental health symptoms while the actual prevalence in the study was 45.3%.[11]Adeyemi et al had also posited that primary care doctors had difficulty in recognizing minor mental health disorders which accounted for 94.4% of morbidity in the primary health care setting in the South-West geopolitical zone of Nigeria.[12]

There was a preponderance of morbidity among the **married** respondents in the doctors' detection when compared to the single, separated, divorced or widowed respondents (Table IV). This is comparable to the report of Niaz et al in Pakistan[22] but contradicted the findings of investigators who observed that those who were separated, divorced or widowed had more likelihood of being identified as 'cases'.[2] Ngoma et al reported in his studies that being married was not associated with morbidity.[13] Possible explanation to the observation in this study could be linked to: inadequate finance to meet up family needs, family disharmony, and lack of intimate and confiding relationship with spouse.[8,9] On the whole, it is very likely that socio-cultural differences between settings may be responsible for these discrepancies.

Statistically significant difference in education was found for those with **Primary education** when compared with the uneducated and those with secondary education above (Table IV). Poor education has recently been associated with greater vulnerability to cognitive decline, making adaptations to aging more difficult and rendering these subjects more vulnerable to mental health problems.[2] A study in Nigeria using the GHQ-12, however, found no significant difference for level of education.[18]

In this study, it was evident that sex as a socio-demographic characteristic showed statistically significant difference and greater percentage of **males** (8%) were observed as 'high scorers', compared to their female (2%) counterparts (Table V). This contradicts the findings of majority of workers who reported that women had a higher rate of mental health morbidity than their male counterparts[2,5,7,9] The peculiarity observed in this particular study could be related to ethno-socio-cultural perceptions of illness and global differences in the perception of disease.[23]There was no statistically significant association in the age group parameter and occupation.

LIMITATIONS

Distortions can sometimes result from the use of the GHQ being a screening instrument. These may occur from the tendency of some respondents to give responses they consider as socially desirable or use such defense mechanism as denial.

No formal assessment of language proficiency was used to screen the participants in this study for acceptable levels of fluency in both languages even though the Intra Class Correlation(ICC) from the test-retest reliability for the translated (Efik) version of the GHQ-12 was high (0.91).

The doctors' interview styles were not studied. This would have made it possible to list out undesirable attitudes of the Primary Care Physicians and appropriate corrections suggested.

The study was hospital-based and so, the results reported should be considered as preliminary evidence of the detection power of the Family Physicians in such a setting.

CONCLUSION

In this study, the authors observed that despite the high proportion of mental health morbidity **(48.6%)** in the Family Medicine Geriatric Clinic of the UCTH, Calabar, the detection rate by Family Physicians was low **(9.4%)**. **Male** gender, being **married** and having only **Primary education** were the most consistent identifiable characteristics associated with mental health morbidity among the geriatric patients.

Using the simple and easily administered assessment tool like the GHQ-12 and paying attention to patients' socio-demographic parameters, should help Family physicians to improve the identification of possible mental health morbidity and also assess the general psychological well-being in the geriatric population. In addition, further training in geriatric medicine and mental health for Family Physicians in Nigeria,[24] as it is done in the USA and Canada, would also increase their knowledge and interest towards geriatric care. This training need should be considered for the entire West African countries since the expectations of Family Physicians in this sub-Region are essentially the same. Old age should not spell doom, despair, disease and death if the society plans for old age economically, medically and psychosocially and the elderly in Nigeria has access to preventive services and early treatment.

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