

## Detection of mental disorders with the Patient Health Questionnaire in primary care settings in Nigeria

Olawale O. Ogunsemi,<sup>1</sup>  
Francis A. Oluwole,<sup>2</sup> Festus Abasiubong,<sup>3</sup>  
Adebayo R. Erinfolami,<sup>4</sup>  
Olufemi E. Amoran,<sup>2</sup> Adekunle J. Ariba,<sup>5</sup>  
Christopher O. Alebiosu,<sup>1</sup>  
Michael O. Olatawura<sup>1</sup>

<sup>1</sup>Dept. of Medicine, Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State; <sup>2</sup>Dept. of Community Medicine and Primary Care, Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State; <sup>3</sup>Dept. of Psychiatry, University of Uyo, Akwa Ibom State; <sup>4</sup>Dept. of Psychiatry, College of Medicine, University of Lagos, Lagos state; <sup>5</sup>Dept. of family medicine, Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria

### Abstract

Mental disorders lead to difficulties in social, occupational and marital relations. Failure to detect mental disorder denies patients potentially effective treatment. This study aimed to assess the prevalence and nature of mental disorders at the primary care settings and the recognition of these disorders by the attending physicians. Over a period of eight weeks, consecutive and consenting patients who attended three randomly selected primary health care facilities in Sagamu Local Government Area of Ogun state were recruited and administered a questionnaire that included a socio-demographic section and Patient Health Questionnaire (PHQ). A total of 412 subjects took part in the study. Subject age ranged from 18-90 years with a mean age of 52.50±21.08 years. One hundred and seventy-six (42.7%) of the subjects were males. A total of 120 (29.1%) of the subjects had depressive disorder, 100 (24.3%) had anxiety disorder, 196 (47.6%) somatoform disorder and 104 (25.2%) met the criteria for an alcohol related problem. The PHC physicians were only able to diagnose disorders relating to mental health in 52 (12.6%) of the subjects. Health and work situations accounted for more than three-quarters of the causes of stress experienced by the subjects. We conclude that there is a high prevalence of mental disorders among patients seen in primary care settings and that a significant proportion of them are not recognized by the primary care physicians. Stress relating to

health, work and financial problems is common among primary health care attendees. Physicians in primary health care should be alert to the possibility and the impact of undetected psychiatric morbidity.

### Introduction

There has been increasing global recognition of common mental disorders as major public health problems in primary care settings.<sup>1</sup> This is due to the fact that mental disorders have a dramatic effect on the lives of those who experience it and their families, and have a considerable economic impact on society. They result in impaired functioning, increased need for health care and marked deterioration among the different domains of quality of life.<sup>2,3</sup> Even milder disorders impair functional capacity, leading to difficulties in social and marital relations. Estimating the economic cost of mental illness is complex because there are direct costs (actual medical expenditures), indirect costs (the cost to individuals and society due to reduced or lost productivity), and support costs (time lost to care of family members with mental illnesses). It has been estimated that at least 20% of primary care patients have a mental disorder,<sup>3,4</sup> yet they seem to go undetected and untreated in 50-75% of the cases.<sup>5,6</sup> Failure to detect mental disorder denies patients potentially effective treatment, and enduring psychological distress has profound effects on patients' capacity to work and enjoy a reasonable quality of life, in addition to the effect on their families.<sup>7</sup> Detection of mental disorder has been shown to reduce the number of subsequent consultations, to shorten the duration of an episode, and to result in far less social impairment in the long term.<sup>7</sup> The rising rate of mental illness may be related to such factors as economic change, political and social violence, and cultural disruptions. Dramatic increases in the numbers of refugees and people dislocated from their homes by economic forces or civil strife are associated with great increases in a variety of mental illnesses for those populations.<sup>8,9</sup> Primary health care provides keys for promoting health and preventing disease among patients who are seen regularly and serves as the basis for early detection, intervention and long-term disease management. Thus, early detection of mental disorders is an important public health issue, since it allows for early interventions that reduce the social impairment in the long term.<sup>7</sup> This study aims to assess the prevalence and nature of mental disorders among patients seen at the primary care settings and the recognition of these disorders by the primary health care physician. This study will provide a background for health

Correspondence: Olawale O. Ogunsemi, Department of Medicine, Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria. E-mail: waleogunsemi@yahoo.com

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care planners to appreciate the magnitude of mental ill health and thus the need to give adequate priority to the prevention, treatment, and rehabilitation of mental disorders at primary and other levels of health care.

### Materials and Methods

#### Setting

This study was conducted in three randomly selected primary health care facilities in Sagamu Local Government Area of Ogun State, located in the south western part of Nigeria. The setting was a teaching hospital which receives referrals from the health facilities (public and private) within the local government area and neighboring local government areas and states. The teaching hospital has a full-running and crowded general out-patient department (with consultant family medicine physician and residents) which patients can attend without referrals from any other health facility. The teaching hospital also has a psychiatric unit within the department of medi-

cine. The unit receives more than 50% of its referrals from the general out-patient department. Only a few referrals come from the primary health care facilities. Patients or their families pay for consultation, though some of the common drugs (anti-malaria, antenatal drugs) may be subsidized. However, immunization, insecticide-treated nets, etc. are to some extent provided free by the local government, depending on availability.

### Study subjects

Consecutive and consenting patients aged 18 years and above who presented to the health care facilities were recruited over a period of eight weeks. Patients with mental retardation and psychosis were excluded from the study. Those with hearing or severe language impairment were also excluded.

### Study instrument

The survey instrument for the study was the Patient Health Questionnaire (PHQ).<sup>5</sup> It is a self-report scale derived from Primary Care Evaluation of Mental Disorders (PRIME-MD) which is a standardized and rapid procedure with demonstrated diagnostic performance (sensitivity of 83%, specificity of 88% and positive predictive value of 80%) for the diagnosis of any psychiatric disorder in primary health care. The PRIME-MD was the first instrument designed for use in primary care that actually diagnoses specific disorders using diagnostic criteria from Diagnostic and Statistical Manual of Mental Disorders-fourth edition (DSM-IV). The PHQ has diagnostic validity comparable to the original clinician-administered PRIME-MD, and is more efficient to use.<sup>5</sup> Research has been carried out among Nigerians using the PHQ.<sup>10,11</sup>

### Data collection and management

The subjects who consented to take part in the study were given the questionnaires to fill in with assistance from three field workers who had been specifically trained for this purpose. The subjects were given the questionnaire after they had been attended to by the health personnel for their ailments. This was considered necessary so as not to have sensitized them to the type of complaints they would present to their doctor/health personnel. The diagnosis made by the primary health care personnel was also noted on the questionnaire for each subject. Completed questionnaires were scrutinized on the spot and at the end of the field session on a daily basis for immediate correction of any erroneous entry. A diagnostic algorithm of PHQ was followed to assign diagnoses as appropriate to the responses. The data were coded and entered into a computer database using SPSS statistical software (version 15).

### Data analysis

Percentages or mean and standard deviations were computed for baseline characteristics of the subjects interviewed. The data analyses focused on univariate frequency table and bivariate cross tabulations that identify important relationships between variables. The relationships between socio-demographic characteristics of the subjects and the presence of psychopathology were examined through bivariate analysis.

## Results

### Socio-demographic characteristics of the subjects

A total of 412 subjects took part in the study. Subject age ranged from 18-90 years with a mean age of 52.50±21.08 years. One hundred and seventy-six (42.7%) of the subjects were male. More than three-quarters of the subjects (79.6%) were married. Fifty-six (13.6%) of the subjects had no formal education, 84 (20.4%) had tertiary education, 140 (34%) secondary education, while the remaining 132 (32.0%) had not gone beyond primary education. Only 52 (12.6%) of the subjects were unemployed.

### Level of psychopathology

A total of 260 (63.1%) of the subjects have one form of psychopathology or the other. Among those with psychopathology, 152

(58.4%) met criteria for only one diagnosis, 60 (23.1%) for two diagnoses while 48 (18.5%) met criteria for three diagnoses. Among those with psychopathology, 196 (75.4%) met criteria for somatoform disorder, 120 (46.2%) met criteria for depression while 100 (38.5%) met criteria for anxiety disorder. Significantly, those who were concerned by their health (78.8% vs. 19.0%;  $\chi^2=106.199$ ,  $P=0.000$ ,  $OR=15.750$ ), stress at work (81.3% vs. 52.8%;  $\chi^2=36.441$ ,  $P=0.000$ ,  $OR=3.869$ ) and financial situations (72.5% vs. 53.1%;  $\chi^2=14.645$ ,  $P=0.000$ ,  $OR=2.322$ ) were more likely to show psychopathology than those who were not concerned about by these issues. The relationship between socio-demographic characteristics and psychopathology is shown in Table 1.

### Specific psychiatric disorders detected by the Patient Health Questionnaire

A total of 120 (29.1%) of the subjects had depressive disorder. A further breakdown indicated that 28 (6.8%) had a major depressive disorder while 92 (22.3%) had another depressive disorder. Females were more likely to have depressive disorder ( $\chi^2=26.002$ ,  $P=0.000$ ) than the males. Close to a quarter of the subjects (24.3%) had anxiety disorder. Panic disorder was diagnosed in 60 (14.6%) of the subjects while a similar number of subjects (14.6%) met the criteria for another anxiety disorder. One hundred and ninety-six (47.6%) met the criteria for the diagnosis of somatoform disorder.

**Table 1. Relationship between socio-demographic variables and psychopathology.**

Socio-demographic variables	N. of respondents	Presence of psychopathology			
		n (%)	$\chi^2$	df	P
Age					
Elderly (>65)	172	100 (58.1)	9.372	2	0.009
Middle age (35-64)	124	92 (74.2)			
Young adult (<35)	116	68 (58.6)			
Sex					
Male	176	108 (61.4)	0.401	1	0.527
Female	236	152 (64.4)			
Level of education					
Nil	56	28 (50.0)	13.433	3	0.004
Primary	132	12 (9.1)			
Secondary	140	24 (17.1)			
Tertiary	84	20 (23.8)			
Marital status					
Married	328	208 (63.4)	0.065	1	0.798
Others	84	52 (61.9)			
Occupation					
Employed	360	236 (65.6)	7.346	1	0.007
Unemployed	52	24 (46.2)			
Tribe					
Yoruba	304	184 (60.5)	3.317	1	0.069
Others	108	76 (70.4)			
Religion					
Christian	228	148 (64.9)	2.218	2	0.330
Moslem	168	100 (59.5)			
Others	16	12 (75.0)			

der. A total of 184 (44.7%) of the subjects had previously taken alcohol. However, 104 (25.2%) of the subjects met the criteria for an alcohol problem. Alcohol problems were more common in males compared with females (48.9% vs. 7.6%,  $\chi^2=64.393$ ,  $P=0.000$ ). Only 7 (1.7%) of the subjects met the diagnosis for eating disorder.

### Recognition of mental disorders by the primary health physicians

Table 2 shows the diagnosis made by the attending physicians as documented in the case notes. The physicians were able to diagnose psychologically related disorders in 52 (12.6%) of the subjects. The ability of the physicians to diagnose a psychiatric/psychological condition was related to the various diagnoses that could be made with the questionnaire. They were only able to identify 17% of the subjects with somatoform disorder as having psychopathology, 24.1% of those with depression, 20% of those with anxiety disorder and 19.2% of those with alcohol problems as having psychopathology.

## Discussion

This study sets out to assess the prevalence of mental disorders among patients seen in a primary care setting and the recognition of these disorders by the physicians working at this level of health care. Findings from this study provide evidence that there is a high prevalence of psychiatric disorders among patients who attend primary health care facilities. These results are largely in line with similar studies.<sup>4,12-14</sup> Epidemiological studies conducted in different parts of the world, using diverse methods and psychiatric instruments have furnished evidence of significant psychiatric morbidity (13-60%) among primary health care population.<sup>15</sup> Regarding the prevalence and nature of psychiatric disorder, the findings from this study suggest that a significant proportion of those attending primary care do suffer from depressive (29.1%), anxiety (24.3%) and somatoform (47.7%) disorders, and alcohol related problems (25.2%). The World Health Organization collaborative study on psychological problems in 14 countries, using a 2-stage case identification methodology in a huge sample (25,916 adults for the first stage and 5,438 for the second) indicated that well defined psychiatric morbidity was frequent in all the general health-care settings examined. The most common problems identified were depression, anxiety, alcohol misuse, somatoform disorder and neurasthenia.<sup>1,16</sup> A survey in Nigeria, using a general health questionnaire and the present state

**Table 2. Diagnosis made by the attending physicians.**

Physician's diagnosis	Frequency (n)	Percentage (%)
Musculoskeletal	68	16.5
Cardiovascular/hypertension	128	31.1
Any form of infection or infestation, e.g malaria	84	20.4
Gastrointestinal/endocrine	28	6.8
Gynecological	28	6.8
Allergy	4	1.0
Psychological disorders	52	12.6
N. diagnosis/awaiting investigation	20	4.9
Total	412	100

examination schedule among primary care patients, estimated the prevalence of psychiatric morbidity at 21.3% with depressive neurosis (51.7%) and anxiety neurosis (36.3%) being the most common disorders.<sup>17</sup> Daradkeh *et al.*, using a similar instrument to that used in this study, reported a 37.8% prevalence of psychiatric disorders among patients attending primary care facilities in the United Arab Emirates.<sup>15</sup> This study indicated an overall prevalence of psychiatric disorders of 63.1%. The political climate and the prevailing economic situation in this part of the world may have contributed to this finding. It is, however, important to note that the method employed in scoring the somatoform disorder in this study could have contributed to the high prevalence that was found. A study that raised the threshold required for diagnosis from three (as employed in this study) to a higher threshold of seven reduced the proportion of patients requiring further investigation to establish or exclude a somatoform diagnosis from 67-28%.<sup>18</sup> Thus, the prevalence reported in this study would have been less if the threshold for diagnosis had been raised from three to seven for somatoform disorders. Moreover, the fact that the patients attend a primary care setting would indicate the formulation of their health problems in somatic terms. It is also worth mentioning that approximately 58% of the subjects received a single diagnosis while about 42% (23.1% two diagnoses, 18.5% three diagnoses) received more than one diagnosis. This finding is similar to that reported by Daradkeh *et al.*, where 60% of detected cases received a single diagnosis and 40% of cases received more than one diagnosis.<sup>13</sup> This calls for concern since mental disorders involve significantly impaired functioning, increased need for health care and marked deterioration among the different domains of quality of life.<sup>23</sup> In terms of ill-health and disability, the impact of poor mental health is ever greater. According to WHO estimates, nearly one-third of all years lived with disability (YLDs) worldwide can be attributed to neuro-psychiatric conditions (i.e. mental disorders and neurological disorders combined).<sup>19</sup>

### Recognition of psychiatric morbidity by primary care physicians

In spite of the high prevalence of mental disorders recorded in this study (63%), the primary health physicians were able to detect psychological disorders in only 12.7% of cases. Evidence from previous studies in different part of the world showed that mental disorders frequently pass unrecognized by the primary health physicians.<sup>5,13,14,17,20,21</sup> Abiodun reported that primary care physicians were only able to detect 13.8% of the psychiatric cases identified in his study of mental morbidity in primary health care in Nigeria.<sup>17</sup> Higgins conducted a meta-analysis of extensive literature over 25 years performed in primary health care settings to find that 33-79% of mentally ill patients had not been recognized by their physicians.<sup>21</sup> In the World Health Organization study on psychological disorders in primary care,<sup>16</sup> only half of those with mental disorders were recognized by primary care physicians; among those patients with a recognizable mental disorder, only half were offered drug treatment. Undetected psychiatric morbidity in primary care commonly leads to unnecessary investigation, medication and continued suffering of the patient. This inevitably leads to impaired family, occupational and social functioning.<sup>22</sup> It is, therefore, of utmost importance for primary care and general practice physicians to be equipped with the necessary skills and measures for detecting and managing their patients. A number of studies have reported a variety of factors to be responsible for the problems of under-recognition of mental disorders in primary care. Patient-related factors include the nature of presentation, i.e. presentation of somatic rather than psychological symptoms,<sup>23</sup> severity of the disorder (more severe problems are more likely to be detected), the co-occurrence of medical and psychological problems, and the stigma associated with psychological diagnoses and treatments.<sup>24</sup> Doctor-related factors include inadequate interview and diagnostic skills,<sup>24,26</sup> insufficient undergraduate and postgraduate training,<sup>27</sup> insufficient time devoted to adequate diagnos-

tic assessment,<sup>27</sup> and a lack of acquisition of new knowledge relevant to provision of treatments. Service-related factors<sup>27</sup> include insufficient remuneration for psychological interventions, insufficient support from specialist public and private mental health services, and inadequate access to non-medical mental health professionals. Improving the detection of mental disorders in primary care is a positive step toward enhancing proper management of mental health disorders in the primary care setting. El-Rufaiel observed that recognition of mental disorder reduces the number of subsequent medical consultations and shortens the duration of an episode. Furthermore, he pointed out that detection of mental disorder will result in greatly reduced social impairment in the long term.<sup>7</sup>

### Stress factors

Subjects were really concerned about some of the life situations in which they find themselves. Quite a number of the subjects were worried about their health, their financial situation and stress at work. Concern about health was considered the most stressful factor by the subjects followed by stress related to work. Those subjects who were concerned by these stressful situations expressed greater psychopathology. Stress has become an integral part of modern life and it can lead to physical ailments, such as heart disease, mental problems, lack of sleep and loss of resistance to illness.<sup>28-30</sup> Whether a stressful life precipitates psychiatric disorders or the presence of psychiatric disorder makes people more prone to stress requires challenging research.

### Socio-demographic variables and psychopathology

It is surprising to find that the subjects who were in one form of employment or other appeared to exhibit more psychopathology than those who were not employed. This is contrary to previous studies that stressed a relationship between unemployment and mental disorder.<sup>31,32</sup> A probable explanation for the finding in this study could be related to the fact that a number of the subjects reported their work to be stressful. It is also important to note that the remuneration from such occupation may not be commensurate with the subjects' needs. This could probably explain why some of the subjects were worried about their financial situation. Another explanation could be that those who have a job will have more people depending on them, since in Africa, and in particular Nigeria, society operates in a close-knit family system. Thus, it is not surprising that the middle aged category, which is expected to consist more of working people, expressed more psychopathology compared with the other groups. It is worthy of note that

the generalized findings of this study are limited by the moderate sample size, the fact that the study was conducted in south western Nigeria which is dominated by a particular tribe (Yoruba) as reflected in the results, and also by the fact that a clinical interview was not conducted for respondents who screened positive with the PHQ. However, Spitzer *et al.* reported a similar prevalence of psychiatric morbidity when the result of PHQ diagnosis was compared with that made by mental health professionals.<sup>5</sup> Another challenge of the PHQ or PRIME-MD is the suitability of its use in diagnosing sub-threshold disorders as reported by Bakker *et al.*<sup>33</sup>

### Conclusions

In conclusions, there is a high prevalence of mental disorders among patients seen in primary care settings and a significant proportion of them are not recognized by the primary care physicians. The common mental disorders encountered in the primary health care settings as found in this study are somatoform disorders, depressive disorders, anxiety disorders and alcohol related problems. Stress relating to health, work and financial problems is common among those who attend primary health care. Clinicians in primary health care and other non-psychiatric settings should be alert to the possibility and the impact of undetected psychiatric morbidity. Health planners need to appreciate the many deleterious effects of mental ill health and thus the need to give adequate priority to the prevention, treatment, and rehabilitation of mental disorders at primary and other levels of care. Training in the recognition and management of common mental disorders should, therefore, be considered a priority.

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