



Preliminary Study of Somatic Complaints as Psychiatric Symptoms Based on Cluster Analysis of Symptoms in Modified Enugu Somatization Scale

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Authors' contributions

This work was carried out in collaboration between all authors. Author CJO designed the study and wrote the first draft of the manuscript with assistance from authors OU and EEE. Author OU wrote the protocol and managed the literature search. Author EEE performed the statistical analysis. All authors read and approved the final manuscript.

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ABSTRACT

Background: Patients with somatic complaints in Nigeria have received various psychiatric diagnoses using the yardstick (criteria) originally developed in western cultures. There are concerns about the adequacy of such diagnoses.

Aims: To determine whether or not somatic symptoms occur in clusters that could constitute specific syndromes.

Study Design: The study design was cross sectional.

Place of Study: Psychiatric Clinic of the University of Calabar Teaching Hospital (UCTH), Nigeria.

Methodology: This study included seventy-one patients that were seen at the psychiatric clinic of the UCTH on account of non-organic somatic symptoms. Using the Modified Enugu Somatization Scale (MESS), each participant was requested to subjectively endorse a point on a Visual Analogue Scale (VAS) that best described the severity of each somatic symptom contained in the

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MESS as it applies to him or her. The participants were also interviewed clinically for possible psychiatric diagnoses based on the criteria of the 10th edition of the International Classification of Diseases (ICD – 10). Their responses on the VAS were subjected to cluster analysis.

Results: Depression, Anxiety and Somatoform disorders were the clinical diagnoses made on the patients. Cluster analysis produced six clusters from which five syndromes were identified. These syndromes were different from one another.

Conclusion: Patients with the same syndrome had different ICD-10 diagnoses indicating that the use of the western illness categories may be inadequate for diagnosing Nigerian patients with somatic complaints.

Keywords: Somatic complaints; depression; anxiety; cluster analysis; non-organic somatic symptoms.

1. INTRODUCTION

The world over, psychiatric disorders are prevalent across cultures but their presentations may differ according to various cultural processes [1]. The work of Binitie [2] on the somatic manifestations of depression in Africans will attest to the influence of culture on psychopathology. Other Nigerian psychiatrists have also observed that psychiatric illnesses in Nigeria tend to manifest more with somatic symptoms in contrast to what obtains in the Western countries [3,4]. In an epidemiological study conducted in western Nigeria, it was noted that almost all (80-97%) of the psychiatric cases identified in the country presented with somatic symptoms in contrast to the 45-63% recorded in a similar study in a North American setting [5]. Subsequent studies from other parts of Africa tend to support the assertion that psychiatric disorders in Africans manifest more with somatic symptoms than psychological symptoms [4,6,7]. These somatic symptoms include a range of symptoms such as the disturbance of sleep, changes in appetite, lack of energy, decreased libido, dizziness, palpitations, aches/pains, and sensation of heat among others [8,9]. Although these symptoms are essentially physical in nature, they could nevertheless be legitimate symptoms of psychiatric disorders. According to Morakinyo, the complaints of somatic symptoms occur early in the development of mental illness in Africans [10]. Although he did not state the type of mental illness these subjects developed, it is well documented that somatic complaints co-occur mainly with Anxiety and Depressive disorders [9,11-13].

The prominence of somatic symptoms in Depression has led some researchers to suggest that somatic complaints be regarded as part of the diagnostic criteria for depressive disorders [14]. Although the International Classification of Diseases – 10th edition (ICD-10) recognized

four somatic symptoms (sleep disturbances, appetite disturbances, loss of libido and amenorrhea) as diagnostically significant in depressive disorders [15], this is grossly inadequate given the wide range of somatic complaints encountered in depressed patients. African patients with Depressive disorders often present with complaints of unique somatic symptoms such as the “sensations of internal heat”, “peppery feeling” and “crawling / creeping sensations”. A number of such symptoms encountered in mentally ill Africans are yet to be explicitly stated in the diagnostic criteria of the ICD 10.

Apart from Depressive disorders, patients with somatic complaints have also been diagnosed with Anxiety and Somatoform disorders [9,16,17]. Bridges and Goldberg averred that the complaint of somatic symptoms contribute to the misdiagnosis of psychiatric disorders in primary care settings [18].

Makanjuola observed that certain somatic symptoms clustered around the head. This made him to suggest that the phenomenon might be culture specific [19]. He recommended the factor analytic approach to the study of symptoms of patients with somatic complaints. To approach the study of somatic symptoms from a fresh perspective, we applied cluster analysis (a technique that closely resembles factor analysis) to somatic symptoms in a sample of patients referred to the psychiatric clinic of a tertiary hospital in Nigeria. The aim was to determine whether or not such somatic symptoms occur in clusters that can constitute specific syndromes. Considering that symptom clusters give the clinician initial clue to the underlying pathology (for example cluster of chest pain, difficulty in breathing, cough and fever might suggest pulmonary pathology to the clinician, while abdominal pains, heartburn and gas in stomach might be suggestive of peptic problems), cluster

of somatic symptoms may be symbolic and indicative of the underlying psychiatric disorder.

This present study will therefore improve our understanding of psychological disorders presenting with bodily complaints as well as contribute to the available data from sub Saharan Africa.

2. METHODOLOGY

This was a cross sectional study.

2.1 Study Location

This study was carried out at the psychiatric clinic of the University of Calabar Teaching Hospital (UCTH). The UCTH is a tertiary hospital located in Calabar, the capital city of Cross-River state in southern Nigeria. The clinic provides psychiatric consultations to various departments of the teaching hospital as per request. The clinic is conducted every Wednesday by four consultant psychiatrists. Patients require a referral to be attended in this clinic.

2.2 Study Population

Seventy-one patients that participated in this study were referred from the General Out Patients Clinic (GOPC) of the UCTH on account of non-organic somatic symptoms. Each patient was referred with a referral note which listed his or her somatic complaints. The referral note also stated that organic causes of their complaints have been ruled out.

2.3 Instruments

In this study, we used the Modified Enugu Somatization Scale (MESS) [9]. This is a 50-item instrument derived mainly from the original version of Enugu Somatization Scale [20]. Each item enquired about the presence or absence of specific somatic symptom. Above each somatic symptom is a horizontal line measuring 100 millimeter and anchored at both ends with the words "not at all" at the extreme left and "very severe" at the extreme right. This 100 millimeter horizontal line is the Visual Analogue Scale (VAS) [21]. The VAS has been employed in studies by some investigators [22,23].

2.4 Procedure

Every clinic day during the study period, we went through the referral notes and identified patients

that were referred to the clinic on account of somatic complaints not attributed to organic pathology. Such patients were approached and the purpose of the study was explained to them. Their informed consents were sought and those that consented were recruited into this study.

During consultation, each patient was given a copy of the Modified Enugu Somatization Scale and was instructed to place a mark using a pencil on the VAS to indicate how severe he or she is disturbed by the somatic symptom presented below the VAS. A mark at the extreme right indicates the most severe degree of the symptom imaginable by the patient while a mark at the extreme left signifies absence of the somatic symptom presented. The patient's response on the scale represents the level of severity of the particular symptom. The score was calculated by measuring the distance (in millimeter) from the extreme left of the VAS to the mark made on the scale by the patient. The patient's score on each somatic symptom was recorded along with the patient's demographic information.

Each participant was also interviewed by a psychiatrist and a clinical diagnosis made using the ICD-10 criteria. This procedure was followed until 71 consenting patients were assessed.

3. RESULTS AND DISCUSSION

3.1 Results

A total of 43 different somatic symptoms had positive respondents and these are shown in Table 1. As shown in the table, the symptoms are arranged in descending order of frequency of occurrence. The mean severity rating of each symptom and the standard deviation are also shown in the table. The symptoms with less than two positive respondents (a total of 11 symptoms) were excluded from further analysis.

When the symptoms were subjected to cluster analysis and plotted, a dendrogram which is shown in Fig. 1 emerged.

At the left side of the dendrogram are patients identification numbers (ID). These numbers represent the order at which the subjects were recruited into the study. The 38th person to be recruited is represented by the number 38 while number 49 represents the 49th person to be recruited. Likewise, number 7 (which is the last ID on the dendrogram,) represents the

Table 1. Somatic symptoms reported by the subjects

Symptoms	Frequency of occurrence	Mean severity rating \pm Standard deviation
Poor sleep (Insomnia)	56	43.4 \pm 11.3
Frequent headache	22	42.2 \pm 10.5
Lack of appetite	19	43.4 \pm 8.4
Body heat	19	44.1 \pm 10.9
Heart beating fast (Palpitation)	16	47.6 \pm 8.7
Weight loss	13	42.6 \pm 8.5
Crawling sensation on the body	11	49.0 \pm 9.4
Dizziness	11	42.7 \pm 11.3
Constant waist pain	8	39.0 \pm 7.7
Chest pain	8	36.8 \pm 11.0
Painful spots in the head	7	34.3 \pm 7.7
Decreased libido	6	48.7 \pm 17.1
Stomach pain	6	30.0 \pm 11.7
Cannot see properly	5	40.8 \pm 10.1
Body pain	5	29.8 \pm 8.4
Body weakness	4	49.3 \pm 30.0
Peppery sensation on the body	4	43.0 \pm 9.8
Heat in the head	4	35.0 \pm 15.6
Feeling light in the body	4	22.5 \pm 12.1
Shoulder is heavy	3	37.7 \pm 0.6
Pain in the eyes	3	36.0 \pm 19.0
Body itching	2	47.5 \pm 12.0
Stomach turns and makes noise	2	47.0 \pm 2.8
Abnormal movements in the stomach	2	46.5 \pm 9.2
Head feels bigger than normal	2	45.0 \pm 18.4
Crawling sensation in the head	2	44.5 \pm 2.1
Heat at some parts of the body	2	39.0 \pm 0.0
Frequent backache	2	38.5 \pm 2.1
Feeling the heart cutting	2	33.5 \pm 6.4
Numbness	2	33.0 \pm 1.4
Lack of balance while walking	2	30.0 \pm 0.0
Shaking (tremors) of the hands	2	29.0 \pm 7.1
Excessive sweating without exercise	1	63.0 \pm 0.0
Needle-like pinching in the head	1	45.0 \pm 0.0
Something rolling inside the head	1	42.0 \pm 0.0
Coldness of the feet	1	34.0 \pm 0.0
Neck pain	1	30.0 \pm 0.0
Heaviness in the head	1	26.0 \pm 0.0
Tightness all over the body	1	25.0 \pm 0.0
No erection	1	23.0 \pm 0.0
Heat in the eyes	1	22.0 \pm 0.0
Needle-like pinching in the limbs	1	18.0 \pm 0.0
Food travels down slowly in the stomach	1	14.0 \pm 0.0

7th person to be recruited into the study. The dendrogram shows that subjects are linked together by various linkages to form specific groups. This grouping is based on the similarities among the subjects (which are the somatic symptoms they complained of). Thus, subjects that complained of similar symptoms are grouped together. Then similar groups are further linked

together to form a larger group. Further linkages continue in a similar manner until all the groups get linked together to form a dendrogram.

Above the dendrogram is a scale of 0 to 25. The similarity among group members increases with closeness of the point of formation of the group to zero on this scale. Using the linkage reports

displayed during cluster analysis as a guide, the dendrogram generated was cleaved at point 11 (along the scale of 0 to 25) and six clusters extracted. Cluster 1 contains 12 subjects represented with numbers 38 down to 51 as shown in the dendrogram. Cluster 2 has 10 subjects (starting from number 57 to 15) while cluster 3 is made up of 20 subjects (from number 28 down to number 4 on the dendrogram). Cluster 4 commenced at number 58 and

terminated at number 30 (a total of 7 subjects). Cluster 5 has a total of 14 subjects (represented on the dendrogram with numbers 20 down to 47). The last cluster extracted in this study (cluster 6) commenced from number 17 down to number 29 on the dendrogram. Given that we cleaved the dendrogram at point 11, the last person on the dendrogram (number 7) did not form any linkage with any person. Thus he (patient with number 7) did not appear in any of the six clusters.

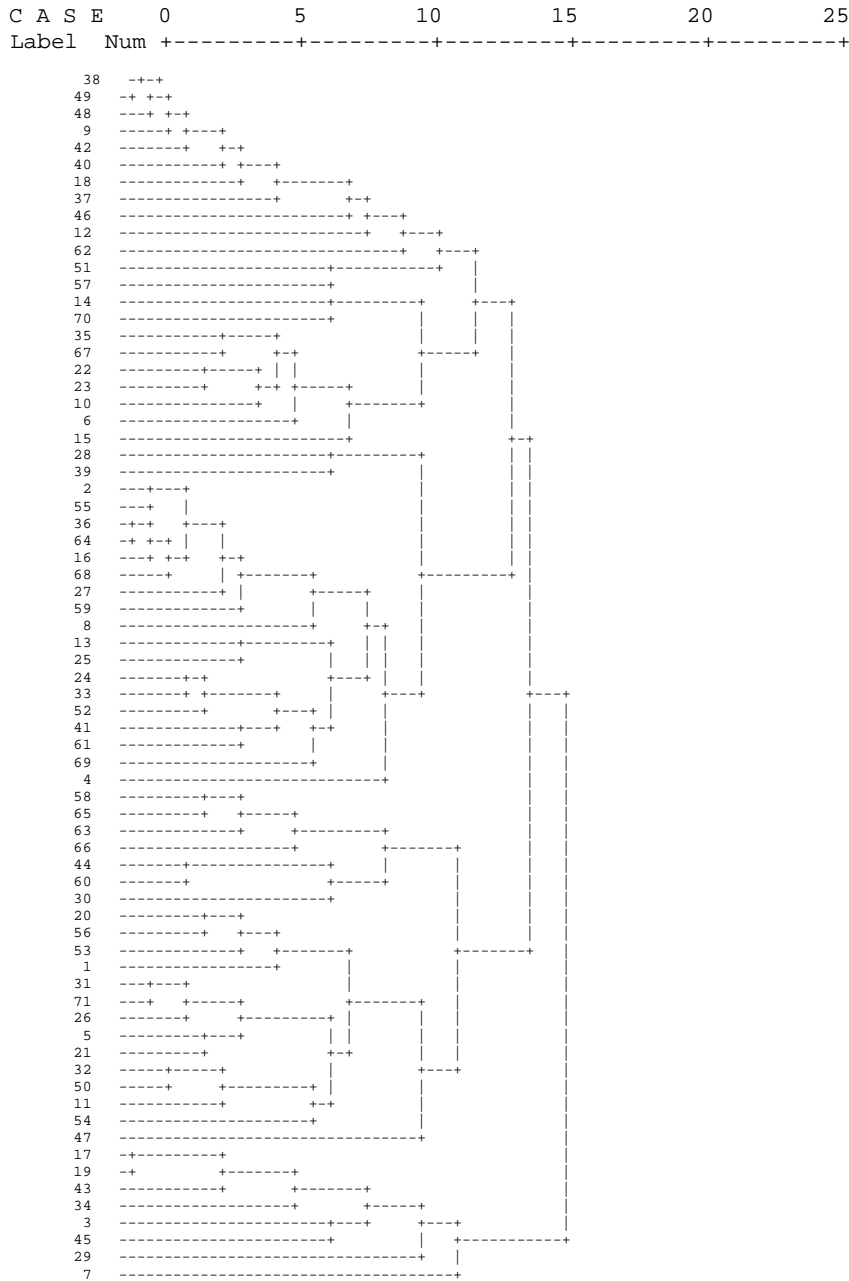


Fig. 1. Dendrogram using average linkage (between groups)

Table 2. Percentage frequencies of somatic symptoms in the extracted clusters

Somatic symptoms	1 (12 cases)	2 (10 cases)	3 (20 cases)	4 (7 cases)	5 (14 cases)	6 (7cases)	No cluster (1 case)	Overall (71 cases)
Poor sleep (Insomnia)	100	90	95	14.3	57.1	100	100	56
Frequent headache	8.3	20	85*	0	7.1	0	0	22
Lack of appetite	50	80*	10	0	21.4	0	0	19
Body heat	91.7*	50	0	14.3	0	28.6	0	19
Heart beating fast (Palpitation)	0	0	5	0	100*	14.3	0	16
Weight loss	0	90*	5	0	7.1	14.3*	0	13
Crawling sensation on the body	0	0	15	0	0	100*	100*	11
Dizziness	0	10	45*	14.3	0	0	0	11
Constant waist pain	8.3	10	5	14.3	0	57.1	0	8
Chest pain	16.7	0	5	0	35.7	0	0	8
Painful spots in the head	0	0	0	0	57.1*	0	0	7
Decreased libido	8.3	20*	0	42.9*	0	0	0	6
Stomach pain	25*	0	10*	0	0	14.3	0	6
Cannot see properly	8.3	0	0	0	0	57.1*	0	5
Body pain	0	10	0	14.3*	28.6*	0	0	5
Body weakness	25*	10	0	0	0	0	0	4
Peppery sensation on the body	0	0	15	0	0	14.3*	0	4
Heat in the head	0	0	20*	0	0	0	0	4
Feeling light in the body	8.3	0	10	14.3*	0	0	0	4
Shoulder is heavy	0	0	0	0	28.6*	0	0	3
Pain in the eyes	0	0	0	0	14.3*	14.3*	0	3
Body itching	0	10*	0	14.3*	0	0	0	2
Stomach turns and makes noise	0	10*	0	0	0	14.3*	0	2
Abnormal movements in the stomach	0	0	5	0	7.1*	0	0	2
Head feels bigger than normal	0	0	5	0	0	0	100*	2
Crawling sensation in the head	0	10*	0	14.3*	0	0	0	2
Heat at the limbs	0	10*	0	14.3*	0	0	0	2
Frequent backache	0	0	0	0	7.1*	0	100*	2
Cutting of the heart	0	0	5	0	7.1*	0	0	2
Numbness	8.3*	10*	0	0	0	0	0	2
Lack of balance while walking	8.3*	0	5	0	0	0	0	2
Shaking (tremors) of the hands	0	0	0	0	14.3*	0	0	2

*signifies binary frequency ratio >2

The percentage frequencies for each somatic symptom within the six clusters are shown in Table 2. The information provided by the percentage frequencies is limited because a symptom that is highly prevalent in the entire sample (eg poor sleep) tended to have high percentage frequencies within the clusters. These figures would therefore be mostly a reflection of the entire sample characteristic rather than those of a specific cluster. For this reason, the binary frequency ratios (i.e percentage frequency of symptom in a cluster divided by percentage frequency of same symptom in the entire sample) were taken into consideration.

Tables 3 – 8 give the other features of the six clusters extracted. The table for each cluster shows the somatic symptoms present in that cluster. These symptoms occur together and therefore form a syndrome (a group of symptoms that almost always occur together). Patients with these symptoms are represented by numbers that indicated the order at which they were recruited into the study. The clinical diagnoses for each patient and the subjective severity rating for each symptom are also shown (zero indicates absence of the symptom).

3.1.1 Cluster 1

This consists of 14 somatic symptoms reported by a group of 12 patients represented on the dendrogram with numbers 38,

49,48,9,42,40,18,37,46,12,62,51. As shown in Table 3, the predominant symptoms in this cluster are poor sleep and body heat. These two symptoms occurred together in almost all the patients in this group. Body heat is the major distinguishing feature of this cluster. This is because in addition to being common to most patients in this group, it also has a high binary frequency ratio. For this reason, this cluster is labeled as BODY HEAT SYNDROME.

3.1.2 Cluster 2.

Table 4 shows that this cluster consists of 15 somatic symptoms reported by patients with numbers 14,70,35,67,22,23,10,6,15 and 57 (a total of ten patients). As shown in the table, the predominant symptoms in this cluster are poor sleep, weight loss and a lack of appetite. These 3 symptoms were reported by over three-quarter of the patients in this group. The distinguishing features of this cluster are weight loss and lack of appetite. This is because the two symptoms are common to most patients in this group and also have high binary frequency ratios within cluster 2. This cluster is therefore labeled as SYNDROME OF WEIGHT LOSS AND LACK OF APPETITE.

3.1.3 Cluster 3

Table 5 shows that cluster 3 consist of 17 somatic symptoms. These were reported by 20 patients represented on the dendrogram with

Table 3. Details of patients in cluster 1

Variables	Patients details and their ratings on symptoms											
	38	49	48	9	42	40	18	37	46	12	62	51
Gender	M	M	F	M	M	M	F	F	M	F	M	F
Age (Years)	45	32	37	29	53	27	35	40	31	32	26	43
Clinical Diagnoses	Dd	Ga	Dd	Ga	Dd	Ga	Dd	Dd	Dd	Dd	Ga	Dd
Poor sleep	40	52	51	54	46	24	46	34	44	22	49	55
Body heat	48	48	62	42	48	36	62	53	50	46	55	0
Lack of appetite	0	30	53	30	50	32	0	0	0	0	0	47
Stomach pains	0	0	0	28	0	0	25	0	0	0	11	0
Body weakness	0	0	0	0	38	0	0	26	0	0	0	61
Chest pain	0	0	0	0	0	38	27	0	0	0	0	0
Decreased libido	0	0	0	0	0	0	0	0	52	0	0	0
Numbness	0	0	0	0	0	0	0	0	32	0	0	0
Frequent headache	0	0	0	0	0	0	0	0	0	41	0	0
Waist pain	0	0	0	0	0	0	0	0	0	47	0	0
Cant see properly	0	0	0	0	0	0	0	0	0	0	28	0
Feeling light in the body	0	0	0	0	0	0	0	0	0	0	13	0
Body tightening	0	0	0	0	0	0	0	25	0	0	0	0
No balance while walking	0	0	0	0	0	0	0	30	0	0	0	0

Gender
M (Male) = 7,
F (Female) = 5

Age
Mean = 35.8
SD = 8.1

Clinical diagnoses
Dd (Depressive disorder) = 8
Ga (Generalized anxiety disorder) = 4

Table 4. Details of patients in cluster 2

Variables	Patients details and their ratings on symptoms									
	14	70	35	67	22	23	10	6	15	57
Gender	M	F	F	F	F	M	F	F	F	F
Age (Years)	35	46	70	47	37	34	33	39	46	41
Clinical diagnoses	Ga	Dd	Us	Dd	Ga	Dd	Dd	Dd	Us	Us
Frequent headache	42	39	0	0	0	0	0	0	0	0
Body heat	41	51	0	0	43	0	36	0	0	37
Poor sleep	46	70	34	0	40	53	41	55	34	42
Numbness	34	0	0	0	0	0	0	0	0	0
Weight loss	51	54	44	39	40	41	57	42	51	0
Lack of appetite	0	49	49	45	49	47	62	41	47	0
Body pains	0	35	0	0	0	0	0	0	0	0
Heat at the limbs	0	0	39	0	0	0	0	0	0	0
Decreased libido	0	0	0	0	27	39	0	0	0	0
Body itching	0	0	0	0	0	0	39	0	0	0
Creeping sensation in the head	0	0	0	0	0	0	0	43	0	0
Dizziness	0	0	0	0	0	0	0	0	40	0
Stomach turns and makes noise	0	0	0	0	0	0	0	0	49	0
Body weakness	0	0	0	0	0	0	0	0	0	72
Waist pain	0	0	0	0	0	0	0	0	0	41

Gender
M (Male) = 2
F (Female) = 8

Age
Mean = 42.8
SD = 10.9

Clinical diagnoses
Dd (Depressive disorder) = 5
Ga (Generalized anxiety disorder) = 2
Us (Undifferentiated somatoform disorder) = 3

numbers 28 down to 4. The predominant symptoms in this cluster were frequent headache and poor sleep. These two symptoms were common to over three-quarter of the patients in this cluster. What distinguishes cluster 3 from others is frequent headache which has a high binary frequency ratio only in this cluster. Accordingly, this cluster is labeled as SYNDROME OF FREQUENT HEADACHE.

3.1.4 Cluster 4

The composition of cluster 4 is shown in Table 6. As can be seen from the table, the symptoms in this cluster do not constitute a syndrome because no set of somatic symptoms occurred together in majority of the patients.

3.1.5 Cluster 5

Table 7 shows the composition of cluster 7. Palpitation and painful spots in the head distinguish this cluster from others. This is because, in addition to their prominence, their binary frequency ratios are high only in this cluster. But unlike painful spots in the head, palpitation was reported by every patient in this group. Accordingly, this cluster is labeled as the CARDIAC SYNDROME.

3.1.6 Cluster 6

As shown in Table 8, this cluster consists of eleven somatic symptoms. Poor sleep and creeping sensation are the most prominent symptoms in this cluster (having been reported by every patient in this group). Also, creeping sensation has a high binary frequency ratio in this cluster as a result; cluster 6 is labeled as BODY CREEPING SYNDROME.

3.2 Discussion

Following clinical interview and assessments using ICD-10 criteria, every patient that was recruited into this study received psychiatric diagnosis. This is not surprising given that patients with psychiatric disorders in Nigeria where mental illness is highly stigmatized tend to conceal their mental symptoms and present with somatic symptoms in order to attract sympathy.

Based on ICD-10 criteria, the diagnoses given to most patients were Anxiety and Depressive disorders. This finding is in keeping with that of previous studies [9,10,13,24] which observed that anxiety and depressive disorders in Nigerian subjects are frequently masked with somatic complaints.

Table 5. Details of patients in cluster 3

Variables	Patients details and their ratings on symptoms																			
	28	39	2	55	36	64	16	68	27	59	8	13	25	24	33	52	41	61	69	4
Gender	F	M	F	F	F	M	F	F	M	F	F	M	F	F	F	F	M	M	M	F
Age	71	29	29	69	35	43	21	37	45	42	24	23	68	55	46	30	70	62	40	39
Clinical diagnoses	Dd	Dd	Dd	Dd	Dd	Dd	Us	Dd	Dd	Dd	Us	Ga	Dd	Dd	Dd	Us	Dd	Dd	Ga	Dd
Frequent headache	0	0	36	53	44	36	51	48	35	64	49	42	43	24	31	51	39	47	61	0
Poor sleep	57	52	20	38	41	51	23	29	46	43	0	53	55	39	42	56	56	38	62	34
Abnormal movements in the stomach	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heart cuts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0
Lack of balance while walking	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0
Heat in the head	0	0	24	35	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	57
Dizziness	0	0	41	49	36	47	40	73	33	39	41	0	0	0	0	0	0	0	0	0
Feeling light in the body	0	0	16	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0
Stomach pains	0	0	0	0	0	0	0	0	0	40	32	0	0	0	0	0	0	0	0	0
Head feels bigger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Chest pain	0	0	0	0	0	0	0	0	0	0	43	0	0	0	0	0	0	0	0	0
Weight loss	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	0	0	0	0
Lack of appetite	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	0	0	44	0	0
Peppery sensation on the body	0	0	0	0	0	0	0	0	0	0	0	50	51	0	30	0	0	0	0	0
Creeping sensation on the body	0	0	0	0	0	0	0	0	0	0	0	0	0	44	44	33	0	0	0	0
Constant waist pain	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0
Heart beats fast (palpitation)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0

Gender
 F (Female) = 13
 M (Male) = 7

Age
 Mean = 43.9
 SD = 16.6

Clinical diagnoses
 Dd (Depressive disorder) = 15, Us(Undifferentiated somatoform disorder) = 3
 Ga (Generalized anxiety disorder) = 2

Table 6. Details of patients in cluster 4

Variables	Patients details and their ratings on symptoms						
	58	65	63	66	44	60	30
Gender	F	F	F	F	M	M	M
Age (Years)	55	21	49	36	42	48	49
Clinical diagnoses	Dd	Dd	Us	Dd	Dd	Dd	Dd
Dizziness	31	0	0	0	0	0	0
Feeling light in the body	21	0	0	0	0	0	0
Body heat	0	28	0	0	0	0	0
Body pains	0	0	25	0	0	0	0
Body itching	0	0	0	56	0	0	0
Decreased libido	0	0	0	0	52	78	44
Waist pain	0	0	0	0	0	33	0
Creeping sensation in the head	0	0	0	0	0	0	46
Heat in the limbs	0	0	0	0	0	0	39
Poor sleep	0	0	0	0	0	0	31

Gender
F (Female) = 4
M (Male) = 3

Age
Mean = 42.9
SD = 11.4

Clinical diagnoses
Dd (Depressive disorder) = 6
Us (Undifferentiated somatoform disorder) = 1

Table 7. Details of patients in cluster 5

Variables	Patients details and their ratings on symptoms													
	20	56	53	1	31	71	26	5	21	32	50	11	54	47
Gender	F	M	F	M	F	F	M	M	F	M	M	F	F	M
Age (Years)	69	30	20	66	25	29	34	26	51	39	38	38	33	37
Clinical diagnoses	Dd	Ga	Ga	Dd	Ga	Dd	Dd	Ga	Dd	Ga	Dd	Us	Us	Ga
Poor sleep	24	0	0	0	43	33	35	36	29	43	0	0	34	0
Painful spots in the head	21	0	0	42	28	43	34	35	37	28	0	0	0	0
Heart beats fast (Palpitations)	45	60	40	49	49	40	53	44	45	49	48	44	50	62
Chest pain	23	34	59	38	0	0	0	32	0	0	0	0	0	0
Lack of appetite	34	37	0	38	0	0	0	0	0	0	0	0	0	0
Shoulder is heavy	0	0	0	0	37	38	38	0	0	37	0	0	0	0
Body pains	0	0	0	0	0	22	0	22	0	0	25	0	42	0
Pain in the eyes	0	0	0	0	0	0	0	20	0	0	0	0	0	57
Heart cuts	0	0	0	0	0	0	0	0	29	0	0	0	0	0
Shaking of the hands (Tremors)	0	0	0	0	0	0	0	0	0	0	24	0	0	34
Frequent headache	0	0	0	0	0	0	0	0	0	0	0	24	0	0
Abnormal movement in the stomach	0	0	0	0	0	0	0	0	0	0	0	40	0	0
Frequent backache	0	0	0	0	0	0	0	0	0	0	0	0	40	0
Weight loss	0	0	0	0	0	0	38	0	0	0	0	0	0	0

Gender
F (Female) = 6
M (Male) = 8

Age
Mean = 38.2
SD = 14.5

Clinical diagnoses
Dd (Depressive disorder) = 6
Ga (Generalized anxiety disorder) = 6
Us (Undifferentiated somatoform disorder) = 2

During cluster analysis, six clusters which may be useful in case assessments were extracted. From these clusters, the following syndromes were identified;

3.2.1 Body heat syndrome

This syndrome is characterized by symptoms of body heat and poor sleep. Complaints of body

heat are prevalent in Africa where the indigenous concept of disease appears to shape the pattern of symptoms experienced by the patients [25]. Given that common disease conditions in Africa present with temperature elevation (e.g malaria), it is not surprising that psychologically distressed Africans formulate their distress in terms of bodily complaints of heat (so as to mimic temperature elevation). Although Ifeabumuyi [26] held that the

Table 8. Details of patients in cluster 6

Variables	Patients details and their ratings on symptoms						
	17	19	43	34	3	45	29
Gender	F	F	M	F	F	F	M
Age (Years)	43	44	46	44	69	37	20
Clinical diagnoses	Dd	Dd	Dd	Us	Dd	Us	Ga
Body heat	29	22	0	0	0	0	0
Creeping sensation on the body	51	59	55	34	56	58	47
Poor sleep	40	57	42	57	49	40	46
Waist pain	43	44	32	46	0	0	0
Poor vision	0	0	41	48	34	53	0
Pain in the eyes	0	0	0	31	0	0	0
Weight loss	0	0	0	35	0	0	0
Peppery sensation (body)	0	0	0	0	41	0	0
Heart beat fast (Palpitation)	0	0	0	0	0	46	0
Stomach turns and makes noise	0	0	0	0	0	0	45
Stomach pains	0	0	0	0	0	0	44

Gender
F = (Female) = 5,
M = (Male) = 2,

Age
Mean = 43.3
SD = 14.4

Clinical diagnoses
Dd (Depressive disorder) = 4,
Us (Undifferentiated somatoform disorder) = 2
Ga (Generalized anxiety disorder) = 1

complaint of heat by African patients is equivalent to the complaint of feeling depressed by patients of western nations, it is important to note that not all the patients with body heat syndrome were diagnosed of depressive disorder (using the ICD-10 criteria). This suggests that this syndrome is not the same thing as depressive disorder. In terms of complaint of heat, the body heat syndrome is similar to brain-fag syndrome in which complaints of heat occur amidst other somatic complaints. But unlike the brain-fag syndrome, there were no head related symptoms in body heat syndrome. We therefore consider body heat syndrome a distinct entity from brain-fag syndrome and depressive disorder.

3.2.2 Syndrome of weight loss and anorexia

This syndrome is distinguished from others by symptoms of weight loss and a lack of appetite. Poor sleep is also a common feature of this syndrome. Given that these three symptoms (weight loss, lack of appetite and poor sleep) are also common in depressive disorder, one might think that the syndrome of weight loss and anorexia is the same as depressive disorder. However, this is not the case because when ICD-10 criteria were applied, only half the patients with this syndrome received clinical diagnosis of depressive disorder. The implication of this is that the syndrome of weight loss and anorexia (though similar to) is not the same entity as depressive disorder.

3.2.3 Syndrome of frequent headache

This syndrome is unique in the sense that it is distinguished from other syndromes by the prominence of complaints of frequent headache. We consider this syndrome a distinct entity even though majority of the patients with this syndrome received a clinical diagnosis of depressive disorder when ICD-10 criteria were applied.

3.2.4 Cardiac syndrome

This syndrome is characterized by symptoms of the heart beating fast (palpitation), poor sleep (insomnia) and painful spots in the head. The syndrome looks similar to Dacosta syndrome which was also known as Irritable heart of the soldier [27]. Those that sufferer from Dacosta syndrome present with symptoms that simulate heart disease in the absence of pathological abnormalities [27]. Symptoms seen in Dacosta syndrome include breathlessness, palpitation, headache, excessive sweating, chest pain, insomnia, anorexia among others. Palpitation is one of the most predominant symptoms in Dacosta syndrome. In this study, patients with cardiac syndrome complain of insomnia (poor sleep) and palpitation (heart beating fast). The presence of insomnia and palpitation makes this syndrome similar to Dacosta syndrome. Nevertheless, the following differences should be noted: - other prominent symptoms of Dacosta such as breathlessness, headache and excessive sweating are either absent or not

prominent in cardiac syndrome. Besides, the mean age of patients with cardiac syndrome is 38.2 years as against the mean age of onset in Dacosta syndrome which is 28.1. Also, Dacosta is commoner in females than in males (with female to male ratio of 3:2 unlike the cardiac syndrome which is commoner in males than females (with female to male ratio of 3:4). On these bases, we consider cardiac syndrome a different entity from Dacosta syndrome.

3.2.5 Body creeping syndrome

This is the last syndrome identified in this study. It is characterized by the complaints of creeping sensation on the body and poor sleep. This syndrome is similar to Ode-ori (a diagnosis made by traditional healers among the Yoruba tribe in Nigeria) which presents with crawling sensation and other somatic complaints [19]. Unlike in body creeping syndrome, the crawling sensations in Ode-ori are mainly located in the head instead of the body.

Body creeping syndrome is also similar to a condition called morgellon disease which was first described by Sir Thomas Browne [28]. Morgellon disease is characterized by crawling sensations, itching and biting among other complaints. It is considered by Robles and colleagues [29] to be within the spectrum of delusion of parasitosis (a term indicating delusion of infestation by parasitic organism). Thus, in the sense of creeping sensation, morgellon disease and body creeping syndrome are similar. Another similarity between the two is with regards to the demographic characteristics of the patients. Of the seven patients (mean age of 43.3) that have body creeping syndrome, five were females (representing female to male ratio of 2.5:1). Robles and colleagues [29] reported that morgellon disease is seen mainly in middle aged patients, with female to male ratio of 2.5:1. However, it should be noted that body creeping syndrome does not possess other characteristic features of morgellon disease which include itching and biting sensations. We therefore consider body creeping syndrome a distinctive entity which is different from morgellon disease and Ode-Ori.

4. CONCLUSION

This study has demonstrated that somatic symptoms do occur in clusters which may constitute specific syndromes. The clinical

diagnoses made using the ICD-10 criteria could not identify satisfactorily with these syndromes. This is because the patients that were identified with same syndrome attracted different types of diagnoses when ICD-10 criteria were applied. This finding supports the views of some practitioners who had maintained that it is inadequate to use an etic approach in the classification and diagnosis of mental illness in Nigeria [1,20].

In future, further research on differences in psychopathology according to somatic symptom cluster types can be carried out. This might help to fashion out effective treatments for people with somatic complaints that have been presumed difficult to treat [30].

5. LIMITATIONS

This study utilized a small sample size and had no control group; therefore generalization of findings should be with caution.

A close look at the dendrogram would show that the extracted clusters consisted of other smaller clusters. If every small cluster was considered as a separate unit, the number and type of syndromes identified might be different.

The somatic symptoms with less than two positive respondents (a total of eleven) were excluded from cluster analysis. If these symptoms were included, perhaps it would affect the number and type of syndromes arrived at in this study.

Some latent medical (organic) conditions could be responsible for some somatic complaints from some of the patients but for some reasons such as lack of adequate clinical experience or (and) lack of modern equipment for biomedical investigations, these medical conditions were not identified. Thus, the exclusion of an organic pathology by the physicians does not completely mean that none exist since an unidentified or undiagnosed condition may be present.

ETHICAL APPROVAL

The authors declare that this study was reviewed and approved by the Research Ethics Committee of Federal Psychiatric Hospital, Calabar. The study was also performed in accordance with the ethical standards laid down in the 1964 declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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