CLINICAL PROFILE AND PATTERN OF DEMENTIA IN A GERIATRIC CENTRE

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ABSTRACT

Background: **Knowledge on the clinical presentation of dementia is essential for appropriate care, especially in Low-and-Middle-Income Countries where these cases are on a sharp rise and can also aid early detection of other underlying conditions.**

This study sought to provide a broad and updated socio-demographic, clinical profile, pattern of diagnosis and treatment features of people diagnosed with dementia in this setting.

Method: **A retrospective cohort study which reviewed the medical case records of all older adults with dementia receiving treatment at the psychogeriatric and the neurology clinic of the Geriatric Centre (N=192). A proforma was designed to collect information from the case records.**

Results: **The mean (±SD) age of the participants was 74.0(±7.2) years, 97.9% lived with other persons, 50.0% had at least one comorbidity and 52.6% presented late for treatment. Overall, hypertension (64.1%) and diabetes (22.4%) were the most common comorbidity, 55.2% had complaints bordering on behavioural problems; irrational speech (31.3%) being the most common, while 91.7% had forgetfulness as a cognitive symptom.**

Conclusions: **A high rate of comorbidities, as well as late presentation was common among the participants. Our findings appraise the clinical importance of detailed knowledge of the patterns and profiles of older adults with dementia for early presentation and treatment.**

Keywords: Dementia, Older adults, Clinical profile, Clinical pattern, Comorbidity, Behavioural symptoms

INTRODUCTION

The prevalence of dementia is rising globally with the increasing aging population.[1,2] According to a global report in 2019, about 57.4 million people were living with dementia, and this prevalence has been estimated to increase to about 152·8 million cases in 2050.[3] In Nigeria, a systematic review conducted by Adeloye *et al.* in 2019, showed that about 4.9% older adults were living with dementia and projected that by the year 2050, this would have increased to over 1.4 million cases.[4] Of no doubt, this will pose some level of care burden. Knowledge on the clinical presentation of the illness is essential for appropriate clinical care especially in Low-and-Middle-Income Countries where dementia cases are on a sharp rise.[5,6] Evidences have established that identifying the pattern of presentation of people diagnosed with dementia is crucial in making early diagnosis and developing strategies for effective treatment.[7,8] These patterns include the participants' sociodemographic, clinical and pathologic characteristics.[9–11]

To our knowledge, there is little evidence on the presentation and clinical pattern of dementia in Nigeria. Although, there exists some robust studies on its incidence, prevalence and risk factors,[12–14] there is still a dearth of information on the clinical course, pattern of presentation, and specific pointers to diagnosing its subtypes.[15,16]

Dementia awareness is still relatively low with few specialists available,[16,17] leading to a common trend of substantial time lag between identification of symptoms and presentation for treatment among people with dementia (PWD) residing in this setting.[18,19] With the growing number of persons with dementia in LMICs,[9] late identification, under diagnosis and misdiagnosis could become more challenging without adequate knowledge about dementia. Moreover, dementia is usually accompanied with some medical comorbidities[20]; explicit knowledge of the profile and presentation of the disease can aid early detection of other underlying conditions.

Therefore, this study sought to provide a broad and updated sociodemographic and clinical profile, patterns of diagnosis and treatment features of the people diagnosed with dementia in this setting.

MATERIALS AND METHODS

Study Design and Population

A retrospective cohort study conducted among PWD receiving treatment at the psychogeriatric and the neurology clinic of the Geriatric Centre. The Geriatric Centre is located within the University College Hospital (UCH), Ibadan, specially established for provision of care to older people. Psychogeriatric and neurological services such as in-patient and outpatient care, as well as daycare services are part of the specialist services rendered in the facility. The data were collected between 26th July 2021 and 16th September 2021 and the population consisted of older adults attending the Geriatric centre, UCH, Ibadan, Nigeria. Eligible participants were people diagnosed with dementia who had been attending either the psychogeriatric or neurology clinic of the Geriatric centre from 1st January 2013 to 31st December 2020. The participants included were those who had a dementia diagnosis based on either the International Classification of Diseases 10th revision (ICD-10) or Diagnostic Statistical Manual of Mental Disorders IV (DSM 4) criteria documented in their case records and whose hospital records were accessible.

Data Collection

Medical case records of all older adults attending either of the two clinics (psychogeriatric or Neurology) located within the Geriatric Centre, who were diagnosed with dementia between 1st January 2013 and 31st December 2020 were identified. A total of 976 older adults attended both clinics, however only 220 had dementia diagnosis, out of which only 192 case records were available for review. The remaining 28 case records were missing. A proforma was adopted to collect the socio-demographic and clinical details of the participants. The socio-demographic features studied were age, sex, education, occupation, living conditions, while the clinical details include, presenting complaints at first contact, duration of symptoms, medical history, family history, comorbidity profiles, diagnosis before and after examination, type of treatment and medications being used. The psychiatric diagnoses were based on International Classification of Diseases (ICD-10), Classification of Mental and Behavioural Disorders, Neuropsychological Inventory (NPI) and Mini-Mental State Examination (MMSE), Computed Tomography (CT)/ Magnetic Resonance Imaging (MRI) scans and other laboratory tests. A total sampling technique was used to recruit the participants from both clinics.

Data Analysis

Descriptive statistics and charts were generated to evaluate distributions of all study variables and to generate summary statistics including means, standard deviations, frequencies, and percentages. These included the profile/pattern of presentation and diagnosis/ treatment received. To determine the pattern of diagnoses, the investigations carried out by the participants were summarized into frequencies using descriptive statistics. The data were analysed using Statistical Package for the Social Sciences (SPSS) version 23.0. The value of $p < .05$ was considered statistically significant.

Ethical Approval

This study was performed in accordance with the principles stated in the declaration of Helsinki and was approved by the University of Ibadan/University College Joint Ethical Committee (UI/EC/23/0015).

RESULTS

Socio demographic and clinical characteristics of dementia

A total of 192 older adults with dementia were identified from the medical case records based on the eligibility criteria. Mean (±SD) age of the participants was 74.0 (±7.2) years and 56.2% were males. Majority of the participants were educated (82.8%), 67.2%, married, 97.9% lived with other persons and the

Figure 1: Duration of symptoms among behavioural and cognitive cases

majority were referred from the general outpatient unit of the Geriatric centre for cognitive evaluation (90.6%). (Table 1).

Table 1: Socio-demographic characteristics of participants (N=192)

Characteristics	N	%
Age (Years)		
<70	54	28.1
70-79	96	50.0
≥80	42	21.9
Mean(±S.D)	74.0(±7.2)	
Sex		
Male	108	56.2
Female	84	43.8
Educational status		
No formal education	33	17.2
Educated	159	82.8
Living arrangement		
Living alone	4	2.1
Living with others	188	97.9
Marital status		
Currently not married	63	32.8
Currently married	129	67.2
Source of referral		
[a]GOP Geriatric centre	174	90.6
[b]GOPD UCH (main hospital)	6	3.1
Private hospital	3	1.6
[c]Others	9	4.7

[a]*General Outpatient unit of the Geriatric Centre*
[b]*General Outpatient Department, University College Hospital*
[c]*Others- Family Physician, (referral from doctors)*

Over 76.0% of the participants had at least one comorbidity and 52.6% presented late for treatment (>1year). Overall, hypertension (64.1%) and diabetes (22.4%) were the most common comorbid illness and 24.0% had no comorbidity. Furthermore, 66.1% of the participants dropped out of treatment, and 25.5% received pharmacotherapy type of treatment. At the end of this study period, 62.5% participants were alive and 37.5% dead. (Table 2).

Based on the presenting complaints, 55.2% of the participants had complaints bordering on behavioural problems; irrational speech (31.3%) was the most common behavioural symptom listed. Almost all

Table 2: Clinical characteristics and management of older people with dementia (N = 192)

Variables	N	%
Presenting Complaints		
Behavioural	12	6.3
Cognitive	68	35.4
Both	112	58.3
Had Comorbidities		
Yes	146	76.0
No	46	24.0
List of comorbidities		
None	46	24.0
Hypertension	123	64.1
Diabetics	43	22.4
Stroke	4	2.1
Glaucoma	9	4.7
Asthma	5	2.6
Others	13	6.8
Type(s) of treatment received		
Pharmacotherapy	49	25.5
Psychotherapy	11	5.7
Both	132	68.8
Place of care		
Outpatient	186	96.9
Inpatient	6	3.1
Period of presentation to the clinic		
Late presentation (>1year)	101	52.6
Early presentation (≤1year)	91	47.4
Status		
Alive	120	62.5
Dead	72	37.5
Stay in treatment		
Regular	65	33.9
Dropped out	127	66.1

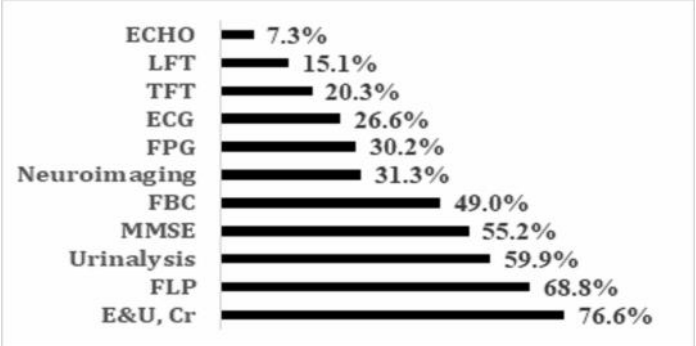

Figure 2: Frequency of investigations carried out by the participants

participants had forgetfulness (91.7%) as a cognitive symptom (Table 3)

Table 3: Behavioural and psychological symptoms found among the participants

Presenting complaints	Yes, n (%)	No, n (%)
Cognitive		
Forgetfulness	176 (91.7)	16 (8.3)
Inability to carry out daily activities	30 (15.6)	162 (84.4)
Behavioural		
Irrational speech/Talking to self	60 (31.3)	132 (68.7)
Odd behaviour	30 (15.6)	162 (84.4)
Wandering	24 (12.5)	168 (87.5)
Sleeping disorders	19 (9.9)	173 (90.1)
Defecating/urinating on self	17 (8.9)	175 (91.1)
Delusion	14 (7.3)	178 (92.7)
Aggression	9 (4.7)	183 (95.3)
Hallucination	12 (6.3)	180 (93.7)
Mood change	5 (2.6)	187 (97.4)

Among those with behavioural complaints, late presentation and dropout rate was found at 57.3% and 59.3% respectively. The mean duration of symptoms presentation for behavioural is 27months and for cognitive, 24months (Fig 1).

In reference to the laboratory tests carried out, 49.0% performed Full Blood Count (FBC), 59.9% Urinalysis, 68.8% Fasting Lipid Profile, 55.2% Mini Mental State Examination and 31.3% Neuroimaging (Fig 2).

DISCUSSION

Profiles of older adults with dementia

A male predominance was noted in the study, which contradicts the findings of several demographic studies that have reported a high prevalence of dementia among the females.[1,21,22] Globally, women have a higher life expectancy than men[23] which contributes to the gender differences in dementia prevalence and incidence.[23] However, it is perceived that the life expectancy gap is gradually closing, and both genders may be at equal risk in some years ahead.[24] Alternatively, the high educational attainment observed among the male participants may have informed the high prevalence of the gender in this study. Consistently, past studies have also shown that highly educated individuals have positive health seeking behaviors[25] and are more inclined to seek specialized services especially for health-related issues than the less educated[26] which can explain our findings as we had more educated males in our study.

Majority of the PWD were between the ages of 70-79 years similar to the findings from other studies.[4,27] While majority of our participants had late onset dementia, a very few cases of young onset dementia were observed similar to reports from other studies.[28,29]

Age has been reported to be the greatest risk factor for dementia[30,31] and people above 65 years are the most affected[2] as this age group have a high propensity for deterioration in intellectual functioning.[32–35] Reports from previous studies conducted have also shown that most people present or are mostly diagnosed with dementia at age 65 and over.[36,37] Another plausible explanation is that dementia symptoms are relatively mild at the initial stages and may be attributed to normal aging, hence, people seek help at the latter stages when the symptoms begin to have significant impact on their daily functioning and quality of life.

Notably, over 97% of our participants live with other persons especially their family members who are mostly the caregivers. Dementia as a chronic condition that affects functioning[18,38] underscores the need for either an informal or formal care.[39,40] In Nigeria, the multigenerational living is still common[41] and has served the purpose of providing informal caregiving to PWD. This is possibly a reflection of the cultural beliefs in our society where filial relationship and respect for the elderly are considered among the highest virtues, and certain stigma are associated with moving older ones/parents to a nursing home; such children are perceived as irresponsible. Notably, Ogunniyi *et al.* in a study on caring for persons living with dementia in Nigeria, reported that most patients live with their family and relatives further affirming the prominent familial connections that exists in this part of the world.[42] However, the mass exodus of the younger generation to inner cities and more developed countries is gradually causing a shift from informal care to formal caregiving and institutionalized care.[41]

Presenting complaints of participants

In the present study, forgetfulness was a common presenting complaint similar to results from some previous studies.[43,44] Dröes *et al.* in their study on Memory problems in dementia confirmed forgetfulness as one of the first identified symptoms in most forms of dementia.[43,45]

In addition to this finding, a larger percentage of our cohort presented with at least one behavioural and psychological symptom of dementia (BPSD) with irrational speech being the most common. Previous reports confirmed that about 90% of people living with dementia commonly present with behavioural problems at the onset and during the course of the illness.[46,47] This is very important in diagnosis, treatment and outcome as BPSD has been shown to be associated with high burden of care[48] and psychological problems in caregivers[49] with increased mortality rates[50] and reduced quality of life.[51] It also makes up a crucial aspect of dementia and a major reason for presentation in hospitals.[47]

Comorbidities

In keeping with findings from literature, hypertension and diabetes were the most common comorbid medical conditions observed in our study. Hypertension and diabetes mellitus have been considered to be related to cognitive dysfunction and brain pathology[52–54] and are major risk factors for dementia.[55] Chen *et al.*, in a cross-sectional study on comorbidity and dementia among persons living with dementia in Taiwan found that hypertension and diabetes were the most common underlying conditions among persons with dementia. Similarly, Ogunniyi *et al.* found that most PWD are commonly diagnosed with hypertension, a comorbidity mostly attributed to old age[42] A six-year follow-up study among PWD and people without dementia in Nigeria showed that the group with dementia exhibited a notably higher prevalence of hypertension compared to the group without dementia.[56] Notably, persons with these medical conditions are predisposed to cognitive decline and dementia.[20] Moreover, there is increasing evidence that dementia is associated with cardiovascular diseases.[57] Studies have shown that having a comorbidity often delays dementia diagnosis and significantly affects the outcomes of treatment[58], increases the risk of dying,[59] reduces quality of life[60] and greater use of health care services. Primary family caregivers of older adults with dementia often experience high caregiver burden and significant decline in a range of health outcomes.[61]

Time of presentation and treatment outcome

It is notable that a larger fraction of the participants presented symptoms late similar to what obtains in previous studies.[62,63] A significant time gap of symptom presentation was found between cognitive and behavioral complaints. The time to presentation of participants with behavioural symptoms was shorter compared to those who had cognitive symptoms. This could be explained by the normalcy bias that forgetfulness in older people is a normal part of the aging process which in most cases lead to the dismissal of seeking care for the cognitive problems. Nakahori *et al.* similarly affirmed that the normalcy bias can lead both older adults and their family members to dismiss the possibility of a seeming case of dementia.[43] However, many begin seeking help when BPSD become disruptive and burdensome[64]. Furthermore, due to the progressive nature of the disease, dementia symptoms are usually mild and overlooked at the initial stages. The negative perceptions of dementia in our setting further contributes to the delay in seeking treatment.[17]

Although studies have shown that behavioral symptoms are one of the major reasons for seeking dementia care.[46,47] We found that most of the participants in our study, especially those with behavioral symptoms, dropped out after initial consultation. However, we can speculate that caregivers tend to withdraw from subsequent appointments after resolution of behavioural symptoms with treatment. Moreover, in some situations, this incidence may have occurred when caregivers become aware that the illness can only be managed and not cured. Family caregivers may be discouraged by the costs of medications, frequent consultations and additional costs of co-managing dementia with other comorbidities evidenced in the increased number of investigative procedures.[65] Majority of the medical costs in this setting are covered by the out-of-pocket system especially for those who are not under any insurance scheme.[61] In keeping with this finding, a study conducted by Elugbadebo *et al.* on accessibility and discontinuity of treatment among older people receiving care in a Geriatric facility, postulated that among several other constraints, older adults drop out after their first appointments due to financial constraints.[66]

The results of the clinical investigations showed a relative comprehensive approach to diagnosing dementia. Notably, over half of the patients had a comprehensive cognitive assessment necessary in diagnosing dementia. Similarly, a higher fraction of the participants had investigations to assess cardiovascular risk factors. Remarkably, only one-third of the cases underwent neuroimaging. While this is relatively low, neuroimaging such as CT scans and MRI, can be very expensive considering that treatment is

usually by out-of-pocket payment and health insurance does not cover full cost for the very few patients that are on the National Health Insurance Scheme.

Limitation

This study was explorative; thus, conclusions have to be drawn cautiously. Secondly, the sample size was relatively small limiting further sub analysis of some important variables.

CONCLUSION

The current study emphasises the range of symptoms that are often present among people living with dementia. Unlike several other studies, male gender was predominant in the sample and most participants live with others. A high rate of medical comorbidities (mostly hypertension) and dropouts, as well as late presentation was observed among the participants. Those who presented with late symptoms had cognitive complaints. Our findings appraise the clinical importance of detailed knowledge of the pattern and profile of older adults with dementia for early presentation and treatment.

Recommendation

The study emphasises the need for the evaluation of the patterns and profile of presentation among a larger sample of older adults with dementia to achieve proper treatment of dementia; increasing the quality of life among the elderly residing in LMICs. There is a need for more dementia awareness with the aim of improving early presentation. We, therefore, recommend more wholistic care in managing dementia.

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