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Unravelling the clinical practice of Nigerian doctors in the management of sickle cell anaemia: an in-depth cross-sectional survey

By

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Abstract

Background: *Multidisciplinary management of sickle cell disease (SCD) is the cornerstone of comprehensive care designed to provide appropriate intervention to prevent or delay the development of multiorgan dysfunction associated with this disorder. This treatment approach involves a wide range of activities geared towards early detection and active management of this disease related organ-system deficit. Available research shows that the mortality rate in SCD is still high, mostly due to poor access to health and lack of comprehensive care management programmes across the board. The aim of this study is to determine the practice of comprehensive care for SCD among Physicians in Nigeria.*

Methods: *This was a cross-sectional descriptive multistage study involving one teaching hospital in 6 geopolitical zones of Nigeria. A structured questionnaire of four sessions of demographic, place of comprehensive care, investigations routinely prescribed to patients and referral habits of physicians was used.*

Results: *A total of 375 complete responses received were analysed. The man age was 42±6 years. About half of the respondents were Consultants 169 (45.1%), Haematologists 85(22.7%) and work in tertiary health centres (66.1%). About half of the respondents do not regularly order routine research (54.5%).*

Conclusion: *A significant proportion of physicians prescribe folic acid and proguanil but less commonly hydroxyurea. Similarly, an abysmal low proportion of participants regularly request for test to detect organ damage. As there are many specialities and categories of physicians involved in SCD patients so is their approach to treatment because guidelines and framework that are embedded within comprehensive care system are not followed by all categories of attending doctors.*

Keywords: *Clinical practice, doctors, sickle cell disease, comprehensive care*

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INTRODUCTION

Sickle cell disease is an inherited haemolytic anaemia which occurs due to a genetic mutation in the beta globin gene, resulting in formation of sickle haemoglobin. It is more endemic in Sub Saharan Africa, especially in Nigeria where up to 25% of Nigerians carry the sickle cell gene. The sickle-cell trait confers some resistance to falciparum malaria during a critical period of early childhood, hence giving the carrier a survival advantage, with subsequent perpetuation of the abnormal gene. Up to 3% of newborns are born with sickle cell disease in Nigeria[1,2]

It has a wide range of clinical manifestations which may be acute or chronic and include vaso-occlusive crisis, acute chest syndrome, stroke, infections, pulmonary hypertension, nephropathy, avascular necrosis of the bones, retinopathy, chronic osteomyelitis, and chronic leg ulcers making it a multi-systemic disease. [3,4]

Comprehensive care of SCD is the holistic, multidisciplinary management of people affected by haemoglobinopathy.[5] Over the last 2 decades the treatment landscape of sickle cell disease (SCD) has shifted significantly with the introduction of the concept of comprehensive management of the disease and disease related complications.[5] The concept encompasses concerted interventions aimed at modifying the natural course of the disease as well as protocols for the early detection and active management of disease related organ-system deficit.[6] The extent to which the comprehensive care is provided to people living with SCD by Physicians in Nigeria has not been previously studied.

Nnodu *et al* [7] in their 2021 study model projected that the mortality rate of SCD in Nigeria, especially in children remains very high mostly due to poor access to health care and lack of comprehensive SCD management programes.[8]

A very vital aspect is the role of medical doctors in the comprehensive care for SCD patients. Considering the challenges leading to increased mortality and the fact that disease modifying agents are not readily available to patients, it is essential that Doctors are knowledgeable on basic aspects of SCD management. This study therefore strives to determine the practice of comprehensive care for SCD among Physicians in Nigeria.

Methodology

Study design: This was a multi-centre cross-sectional descriptive study and involved the administration of a pre-tested online questionnaire to physicians in randomly selected tertiary care facilities in Nigeria. Simple random sampling technique using ballot method was used to select one tertiary hospital from each of the 6 geopolitical zones of the country, and used as the study sites. The research questionnaire addressed three thematic areas of SCD related management, including place of comprehensive care, investigations routinely prescribed to patients and referral habits of physicians.

Study site: The study included six (6) randomly selected tertiary hospitals in Nigeria. The selected hospitals represent the unique geopolitical identity of Nigeria and will include at least one hospital from each of the six (6) geopolitical zones of the country.

Study duration: The study lasted for 3 months; from September to November 2022.

Subject selection/ Study protocol:
Focal persons who must be Haematologist, were selected to co-ordinate the study at each study site. The site coordinators were responsible for administering the study questionnaire to the eligible physicians' online through Google Docs in each hospital.

Sample size calculation: For a 95% confidence level and 5% precision for a Physician population of about 25,000, [9] to be attained, an estimated 394 Physicians were used as the minimum sample size. This was derived from the tables of sample sizes by Glenn et *al* [10]. These tables of sample sizes allow a given combination of precision, confidence level, and variability for different population size to be ascertained. However, a 12% attrition rate was considered, and this brought the sample size to approximately 445 Physicians from the selected hospitals.

Inclusion criteria:
All Physicians who manage SCD patients in the selected hospitals in the country.

Exclusion criteria:
Physicians that are not actively involved in managing patients with SCD in the selected hospitals.

Physicians that did not completely fill the online questionnaire.

Ethical Issues: Ethical approval was obtained from the hospital ethics and research committee of the principal study site, which was Nnamdi Azikiwe University Teaching Hospital Nnewi, Anambra State, Nigeria. Strict confidentiality was maintained through-out the research as participants' names was represented by study identification numbers only and unauthorized persons were not allowed access to study related information that could reveal identity of any of the participants. In addition, information gathered from this research was not used for any other purpose aside from increasing the body of knowledge on the subject matter of the research which will possibly enable policy formulation that will further improve the management of patients with SCD in the hospitals and country at large.

Data Analysis: Data obtained from the study was analyzed using STATA 16.1 (StataCorp. 2019. *Stata Statistical Software: Release 16*. College Station, TX: StataCorp LLC). Sociodemographic characteristics of participants like gender, designation, area of specialty, years of practice and other study related details such as investigations and drugs routinely prescribed for patients and physician referral habits was presented in frequency tables and charts where necessary. All continuous variables like age, number of SCD patients in each centre, number of patients seen in one month and follow-up appointment interval (in months) were subjected to tests of

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normality. Normally distributed continuous variables were represented as mean ± standard deviation (SD). Non-normally distributed continuous variables were represented as median and Interquartile range. Comparison of variable between groups were done using analysis of variance (ANOVA) or the Kruskal-Wallis's test based on normality. P-value less than 0.05 was considered to be statistically significant (confidence level = 95%).

Potential hazard to participants: The study poses no risk to the identity, health, or person of the participants as details of individuals will be strictly protected during and after the study.

Results

A total of 509 completed responses were received out of which 375 (73.7%) were involved in the management of SCD and were further analysed. The mean age was 41.0 ± 8.5 years and male constituted the majority (63.2%). The analysis of level of practice, area of specialization and centre of practice showed that majority of the respondents were Consultants 169 (45.1%), haematologists 85(22.7%) and work in tertiary health centres (66.1%) respectively. (Table 1).

The most prescribed drug was folic acid (96.5%) followed by proguanil (82.9%), while the least prescribed was multivite (21.6%). Majority of the respondents request for full blood count (86%), while about half request for urinalysis. Up to half of the respondents do not regularly order for routine investigations (54.5%), while 13 (3.6%) of respondents order only yearly. Almost all the respondents counsel patients on compliance with routine drugs (96%), adequate hydration (93%) and good health seeking behaviour (93%), while less than half (47%) counsel them on avoidance of mosquito bites in the evenings. (Tables 2,3, 4 and 5).

Table 6 shows there were statistically significant relationships between age, specialty, and geopolitical zone (p value = 0.026, 0.003, 0.0001 respectively). Doctors in teaching hospitals appear to be more accurate with drug prescription, although this is not statistically significant (p =0.08).

A comparison of the characteristics of our respondents with their habit of requesting for routine laboratory test, revealed a statistically significant relationship between this and age of the respondents (p=0.0001), professional cadre (status) (p=0.0001), specialty (p=0.0001), geopolitical zone (p=0.038), years of practice (p=0.001), number of patients seen monthly (p=0.02) and interval of requests (p=0.045). table 7

Table 8 compares the attributes of those that correctly ordered for routine tests using the recommended interval of 3-6 months; 'Yes' for those who did and NO for those who did not. cadre (p=0.002), specialty (p=0.002), centre of practice (p=0.023) and number of SCD patients seen per month (p=0.004) were all found to influence the respondents' ability to request for the routine laboratory investigations at the correct interval.

Discussion

Sickle cell disease is a known cause of mortality and morbidity, especially in Sub- Saharan Africa. Unlike the developed world where measures have been put in place to improve the quality of life of SCD through comprehensive care plans, Nigeria is yet to get to that point. Since mortality in SCD in Nigeria is multifactorial, of which inaccessibility to adequate health care due to lack of funds and non-availability of novel treatments are major factors, we deemed it necessary to ensure that doctors managing these patients have the basic knowledge in aspects of comprehensive care for SCD patients so that unnecessary mortality and morbidity can be avoided.

SCD is a multi-systemic disorder and so the drugs used in its management are diverse [11]. In Nigeria, patients are given some drugs as a routine. Most of these drugs are geared towards aiding erythropoiesis, preventing malaria infestation as well as infections by opportunistic encapsulated organisms due to their splenic dysfunction. In Nigeria, routine drugs for sickle disease patients include folic acid, penicillin prophylaxis, proguanil and to a lesser extent hydroxyurea.[12] Similar to our study, most of the physicians routinely give folic acid and proguanil to the patients. Studies have also reported the role of vitamin C in reducing haemolysis and chronic anaemia.[13] Our respondents also prescribe vitamin C and multivitamins for patients, although the number is in the minority.

Screening and early detection of organ injury in SCD has led to improved disease outcome.[14] Sickle cell disease being a multisystemic disorder predisposes patients to chronic complications like chronic renal failure. It is necessary to monitor these organs routinely for early signs of complications and therefore initiate prompt treatment. Studies have shown that the best marker for detecting early renal dysfunction in SCD is proteinuria on urine dipstick. [15] In our study, we assessed the Doctors on the laboratory tests routinely requested at intervals for patients. We found that only about a half of our respondents routinely request for urinalysis, while about 39% request for renal function test but majority (86%) will request for a complete blood count. Also, less than a quarter order for liver function test routinely. These investigations were not also ordered regularly by majority of them. This suggests that there is suboptimal screening practice for SCD complications amongst medical practitioners.

Sickle cell crisis have been known to be aggravated by certain factors such as extremes of temperatures, stress, dehydration, and infections etc. [16-19] Efobi *et al* [20] in their study on knowledge of preventive measures of vaso-occlusive crisis in SCD patients reported adequate knowledge amongst SCD patients, although their practice was poor. This appears to correspond with our report as majority of the Doctors counsel patients on these preventive measures but the fact that the patients' practice was poor suggests the need for continuous counselling to ensure the patients adhere to the practice. We also reported poor rate of counselling on avoidance of mosquito bites by doctors. This is of great concern, considering the impact of malaria infection in SCD.

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We tried to compare our respondents' practice of drug prescription with their sociodemographic characteristics and other variables and observed that major predictors of correct prescription were age, area of specialty, geopolitical zones, and professional cadre. There was no statistically significant association between gender, centre of practice, and years of practice. The findings on specialty are consonance with a study in the USA [21]

Routine laboratory investigations are an important aspect of comprehensive care of SCD,[14] which aid early detection of organ damages. While we found sub optimal practice of requesting for these lab tests amongst our respondents, we also noted that there was a statistically significant association between age, professional cadre, specialty, number of years of practice, geopolitical zone, number of SCD patients seen monthly, interval of laboratory test request by physicians and their actual practice of requesting for those laboratory tests. (p values=0.0001, 0.0001, 0.0001, 0.038, 0.0001 and 0.0002 respectively) This therefore requires instituting a protocol for all medical practitioners across all geopolitical zones, specialty, and cadre, to ensure the knowledge of aspects of comprehensive care being assay for is well integrated in medical practice.

Improving quality of care in SCD patients is subject to the capacity of the managing physician. Part of the challenges in comprehensive care for SCD patients is availability of highly trained staff and clinicians invested in caring for individuals with SCD. [22] This reflected in our study. Factors found to affect the physician's ability to request for these routine tests at the right intervals included medical cadre, specialty, centre of practice and number of cases seen monthly (p value: 0.002,0.002, 0.023, 0.004 respectively) this further supports to need for more medical training on comprehensive care of SCD patients as it pertains to clinical practice.

In conclusion, this study shows the statistically significant differences in the clinical management of sickle cell disease patients by Nigerian physicians, based on factors such as professional status, specialty, and geographic location. These findings suggest the need for further research to improve the clinical practice of Nigerian physicians in managing sickle cell disease patients more effectively, considering the difficulties in fully assessing the disease modifying agents, it is important that medical doctors managing SCD patients are well versed in their clinical management so that the patient benefits optimally from it.

Potential benefits of the study: Findings from the study will further enrich the existing body of knowledge on the management of patients with SCD in Nigeria and could form a template for care related policy formulation and standardization of care across the country.

Table 1: Background Characteristics of the respondents.

Total = 375	**Frequency**	**Percentage (%)**
Age (years)		
Up to 30	53	10.4
31-40	174	34.2
41-50	213	41.8
Greater than 50	69	13.6
Gender		
Male	237	63.2
Female	138	36.8
Status in the hospital		
Consultant	169	45.1
Registrar	114	30.4
Medical Officer	92	24.5
Specialty		
Haematology	85	22.7
Paediatrics	72	19.2
Community Medicine	65	17.3
General Practitioner	47	12.5
O&G	44	11.7
Internal Medicine	37	9.9
Surgery	25	6.7
Centre		
Teaching Hospital	248	66.1
General Hospital	42	11.2
Federal Medical Centre	32	8.5
PHC	29	7.7
Private Hospital	24	6.4
Geopolitical zone of residence		
Southeast	101	26.9
Northwest	73	19.5
South -south	64	17.1
Northeast	63	16.8
North-Central	37	9.9
Southwest	37	9.9
Years of practice		
11-15 Years	121	32.3
6-10 Years	73	19.5
16-20 Years	65	17.3
> 20 Years	59	15.7
< 5 Years	57	15.2
Number of SCD cases in a month		

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1-5	204	54.4
6-10	67	17.9
> 20	47	12.5
11-15	36	9.6
16-20	21	5.6
Interval of visits		
Monthly 146		38.9
3-6 monthly	164	43.7
Not regular	43	11.5
Only when sick	22	5.9

Table 2: Commonly prescribed routine medications (multiple response)

Routine Drugs	Total Responses	Percent (%)
Folic Acid	362	96.5
Proguanil	311	82.9
Vitamin C	129	34.4
Vitamin B Complex	83	22.1
Multivitamins	81	21.6

Table 3: Routine tests commonly ordered for by the respondents.

Routine tests	Total Responses	Percent (%)
Full Blood Count	321	86
Urinalysis	202	54
Kidney Function Test	147	39
Liver Function Test	90	24

Table 4: Frequency of ordering for laboratory investigations.

Frequency of Routine Tests	Frequency	Percentage
Not Regularly	200	54.5
Monthly	84	23.0
3 to 6 monthly	69	18.9
Yearly	13	3.6

Table 5: Counselling components during clink visits

Counsel	Total Responses	Percent (%)
Compliance With Routine Drugs	360	96
Adequate Hydration	350	93
Good Health Seeking Behaviour	349	93
Proper Nutrition	328	87
Use Of Insecticide Treated Nets	326	87
Avoid Extreme Temperatures	300	80
Avoid Stress	283	75
Avoid Mosquito Bites in The Evenings	177	47

Table 6: compares the attributes of those that correctly gave all the routine drugs: 'Yes' (Proguanil, Folic acid and multivitamins) to those who did not: 'No'

	Total (n=375)	No (n = 280)	Yes (n = 95)	p-value
Age	42.0 ± 8.5	41.4 ± 8.6	43.6 ± 7.9	0.026
Gender				
Female	138 (36.8)	98 (35.0)	40 (42.1)	
Male	237 (63.2)	182 (65.0)	55 (57.9)	0.264
Status				
Consultant	169 (45.1)	117 (41.8)	52 (54.7)	
Medical Officer	92 (24.5)	74 (26.4)	18 (18.9)	0.084
Registrar	114 (30.4)	89 (31.8)	25 (26.3)	
Specialty				
Community Medicine	65 (17.3)	48 (17.1)	17 (17.9)	
General Practitioner	47 (12.5)	38 (13.6)	9 (9.5)	0.003

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Haematology	85 (22.7)	50 (17.9)	35 (36.8)	
Internal Medicine	37 (9.9)	28 (10.0)	9 (9.5)	
O&G	44 (11.7)	38 (13.6)	6 (6.3)	
Paediatrics	72 (19.2)	55 (19.6)	17 (17.9)	
Surgery	25 (6.7)	23 (8.2)	2 (2.1)	
Centre of Practice				
Federal Medical Centre	32 (8.5)	25 (8.9)	7 (7.4)	
General Hospital	42 (11.2)	38 (13.6)	4 (4.2)	0.08
PHC	29 (7.7)	20 (7.1)	9 (9.5)	
Private Hospital	24 (6.4)	15 (5.4)	9 (9.5)	
Teaching Hospital	248 (66.1)	182 (65.0)	66 (69.5)	
Geopolitical zone				
North Central	37 (9.9)	35 (12.5)	2 (2.1)	
North East	63 (16.8)	58 (20.7)	5 (5.3)	0.0001
North West	73 (19.5)	64 (22.9)	9 (9.5)	
South East	101 (26.9)	62 (22.1)	39 (41.1)	
South South	64 (17.1)	42 (15.0)	22 (23.2)	
South West	37 (9.9)	19 (6.8)	18 (18.9)	
Years of practice				
11-15 Years	121 (32.3)	85 (30.4)	36 (37.9)	
16-20 Years	65 (17.3)	51 (18.2)	14 (14.7)	0.07
6-10 Years	73 (19.5)	58 (20.7)	15 (15.8)	
< 5 Years	57 (15.2)	48 (17.1)	9 (9.5)	
> 20 Years	59 (15.7)	38 (13.6)	21 (22.1)	
Number of SCD cases in a month				
1-5	199 (54.2)	155 (57.0)	44 (46.3)	
11-15	35 (9.5)	23 (8.5)	12 (12.6)	0.412
16-20	20 (5.4)	15 (5.5)	5 (5.3)	
10-15	66 (18.0)	47 (17.3)	19 (20.0)	
> 20	47 (12.8)	32 (11.8)	15 (15.8)	
Interval of Visits				
3-6 monthly	162 (43.5)	119 (42.8)	43 (45.7)	
Monthly	146 (39.2)	104 (37.4)	42 (44.7)	0.13
Not Regular	42 (11.3)	37 (13.3)	5 (5.3)	
Only When Sick	22 (5.9)	18 (6.5)	4 (4.3)	

Table 7 compares the attributes of those that correctly ordered for all the routine investigations: 'Yes' (FBC, Urinalysis, Kidney function test, Liver function test) to those who did not: 'No'

	Total (n=375)	**No (n = 310)**	**Yes (n = 65)**	**p-value**
Age	42.0 (36.0-47.0)	41.0 (35.0-46.8)	44.0 (42.0-50.0)	0.0001

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Gender				
Female	138 (36.8)	109 (35.2)	29 (44.6)	
Male	237 (63.2)	201 (64.8)	36 (55.4)	0.195
Status				
Consultant	169 (45.1)	126 (40.6)	43 (66.2)	
Medical Officer	92 (24.5)	85 (27.4)	7 (10.8)	0.0001
Registrar	114 (30.4)	99 (31.9)	15 (23.1)	
Specialty				
Community Medicine	65 (17.3)	63 (20.3)	2 (3.1)	
General Practitioner	47 (12.5)	41 (13.2)	6 (9.2)	0.0001
Haematology	85 (22.7)	59 (19.0)	26 (40.0)	
Internal Medicine	37 (9.9)	30 (9.7)	7 (10.8)	
O&G	44 (11.7)	32 (10.3)	12 (18.5)	
Paediatrics	72 (19.2)	62 (20.0)	10 (15.4)	
Surgery	25 (6.7)	23 (7.4)	2 (3.1)	
Centre of Practice				
Federal Medical Centre	32 (8.5)	26 (8.4)	6 (9.2)	
General Hospital	42 (11.2)	37 (11.9)	5 (7.7)	0.21
PHC	29 (7.7)	27 (8.7)	2 (3.1)	
Private Hospital	24 (6.4)	22 (7.1)	2 (3.1)	
Teaching Hospital	248 (66.1)	198 (63.9)	50 (76.9)	
Geopolitical zone				
North Central	37 (9.9)	35 (11.3)	2 (3.1)	
North East	63 (16.8)	55 (17.7)	8 (12.3)	0.038
North West	73 (19.5)	65 (21.0)	8 (12.3)	
South East	101 (26.9)	77 (24.8)	24 (36.9)	
South South	64 (17.1)	50 (16.1)	14 (21.5)	
South West	37 (9.9)	28 (9.0)	9 (13.8)	
Years of Practice				
11-15 Years	121 (32.3)	97 (31.3)	24 (36.9)	
16-20 Years	65 (17.3)	50 (16.1)	15 (23.1)	0.001
6-10 Years	73 (19.5)	66 (21.3)	7 (10.8)	
< 5 Years	57 (15.2)	55 (17.7)	2 (3.1)	
> 20 Years	59 (15.7)	42 (13.5)	17 (26.2)	
Number of SCD Cases Monthly				
1-5	199 (54.2)	166 (55.0)	33 (50.8)	
11-15	35 (9.5)	30 (9.9)	5 (7.7)	0.002
16-20	20 (5.4)	18 (6.0)	2 (3.1)	

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6-10	66 (18.0)	59 (19.5)	7 (10.8)	
> 20	47 (12.8)	29 (9.6)	18 (27.7)	
Interval of requests				
3-6 monthly	162 (43.5)	128 (41.7)	34 (52.3)	
Monthly	146 (39.2)	120 (39.1)	26 (40.0)	0.045
Not Regular	42 (11.3)	41 (13.4)	1 (1.5)	
Only When Sick	22 (5.9)	18 (5.9)	4 (6.2)	

Table 8: compares the attributes of those that correctly ordered for routine tests using the recommended interval of 3-6 months: 'Yes' to those who did not: 'No'

	Total (n=375)	No (n = 306)	Yes (n = 69)	p-value
Age	42.0 ± 8.5	41.9 ± 8.7	42.3 ± 7.5	0.677
Gender				
Female	138 (36.8)	110 (35.9)	28 (40.6)	
Male	237 (63.2)	196 (64.1)	41 (59.4)	0.56
Cadre				
Consultant	169 (45.1)	129 (42.2)	40 (58.0)	
Medical Officer	92 (24.5)	86 (28.1)	6 (8.7)	0.002
Registrar	114 (30.4)	91 (29.7)	23 (33.3)	
Specialty				
Community Medicine	65 (17.3)	58 (19.0)	7 (10.1)	
General Practitioner	47 (12.5)	43 (14.1)	4 (5.8)	0.002
Haematology	85 (22.7)	60 (19.6)	25 (36.2)	
Internal Medicine	37 (9.9)	29 (9.5)	8 (11.6)	
O&G	44 (11.7)	41 (13.4)	3 (4.3)	
Paediatrics	72 (19.2)	53 (17.3)	19 (27.5)	
Surgery	25 (6.7)	22 (7.2)	3 (4.3)	
Centre of Practice				
Federal Medical Centre	32 (8.5)	26 (8.5)	6 (8.7)	
General Hospital	42 (11.2)	39 (12.7)	3 (4.3)	0.023
PHC	29 (7.7)	28 (9.2)	1 (1.4)	
Private Hospital	24 (6.4)	21 (6.9)	3 (4.3)	
Teaching Hospital	248 (66.1)	192 (62.7)	56 (81.2)	
Geopolitical zone				
North Central	37 (9.9)	32 (10.5)	5 (7.2)	
North East	63 (16.8)	48 (15.7)	15 (21.7)	0.325
North West	73 (19.5)	55 (18.0)	18 (26.1)	
South East	101 (26.9)	83 (27.1)	18 (26.1)	
South South	64 (17.1)	56 (18.3)	8 (11.6)	

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South West	37 (9.9)	32 (10.5)	5 (7.2)	
Years of Practice				
11-15 Years	121 (32.3)	97 (31.7)	24 (34.8)	
16-20 Years	65 (17.3)	57 (18.6)	8 (11.6)	0.369
6-10 Years	73 (19.5)	62 (20.3)	11 (15.9)	
< 5 Years	57 (15.2)	46 (15.0)	11 (15.9)	
> 20 Years	59 (15.7)	44 (14.4)	15 (21.7)	
Number of SCD cases monthly				
1-5	199 (54.2)	173 (58.1)	26 (37.7)	
11-15	35 (9.5)	24 (8.1)	11 (15.9)	0.004
16-20	20 (5.4)	17 (5.7)	3 (4.3)	
6-10	66 (18.0)	53 (17.8)	13 (18.8)	
> 20	47 (12.8)	31 (10.4)	16 (23.2)	
Interval of visits				
3-6 monthly	162 (43.5)	110 (36.3)	52 (75.4)	
Monthly	146 (39.2)	131 (43.2)	15 (21.7)	0.0001
Not Regular	42 (11.3)	41 (13.5)	1 (1.4)	
Only When Sick	22 (5.9)	21 (6.9)	1 (1.4)	

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