

## Perception of gingival bleeding by Nigerians

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### Summary

Two hundred and seventy-five (275) subjects were seen to assess their perception of gingival bleeding and relate it to their periodontal status, sex, and age. Only about a quarter of the subjects claimed to bleed from the gingivae during routine oral prophylaxis. Unfortunately, about the same number admitted to having gum disease, whereas during clinical oral examination it was discovered that all these subjects had gingival bleeding. Also this study showed that more of the subjects who claimed to bleed from the gums thought it was normal compared to those who claimed not to bleed from the gums. The conclusion from the study is that there is poor perception of gingival bleeding and little relevance is placed on its presence in the mouth. There is poor awareness of it as a sign of the presence of pathology of the tooth supporting structures (periodontium), which may be due to local or systemic body disorders. The medical community must, therefore, recognize this fact and educate their patients and the public at large.

### Résumé

Deux cent et soixante quinze (275) sujets ont été examinés, afin d'évaluer leurs perceptions à propos du saignement gingival, et relier cette perception à leur status periodontal, leur sexe et âge. Un quart des sujets examinés, prétendent avoir été victime du saignement gingival au cours de la prophylaxie orale de routine. Malheureusement, presque le même nombre (un quart) ont accepté avoir la maladie gingivale, alors que pendant l'examen clinique, il a été découvert que tous ces sujets ont des saignements gingivale. Cette étude, montre aussi que plus de sujets qui ont prétendus saigner des gencives ont pensés que le saignement était normal, comparé à ceux qui pensent ne pas avoir saigné des gencives. la conclusion de l'étude est que, il y a une très mauvaise perception du saignement gingivale, et une faible relevance est attaché à sa présence dans la bouche. Par ailleurs, il ya une faible conscience de la présence du saignement gingivale comme un signe pathologique de la structure supportant les dents, due à des desordres locaux ou systemique. La communauté médicale doit par conséquent reconnaître ce fait, et éduquer leurs patients et le grand publique.

### Introduction

Bleeding from the gums or gingivae is a common occurrence in the mouth especially during routine scaling and polishing of the teeth. The two earliest symptoms of gingival inflammation preceding establishing gingivitis are an increased gingival fluid rate and bleeding upon gentle probing [1]. Bleeding on probing is, therefore, clinically used in early diagnosis of pathologically involved gingivae either due to local or systemic disorders [2].

The gingivae, according to Manson [3], is that part of the oral mucosa which is bound down to the tooth and to the alveolar bone. It forms the periodontal tissues (periodontium) in combination with the alveolar bone of the jaws, the cementum, and the periodontal ligament. It has a rich blood

supply with a fine capillary network which anastomose with one another so that when ruptured, it results in gingival bleeding. The gingivae is the primary seat of inflammatory gingivitis and periodontitis associated with the accumulation of bacterial plaque. Plaque is a non-calcified adherent material on the tooth surface or other solid structure which is colonized by bacteria in the oral cavity of a person with poor oral hygiene.

Other disorders that can cause gingival bleeding are congenital conditions involving coagulation defects for example, Haemophilia A, Christmas disease, Von Willebrandt's disease, and Hereditary Haemorrhagic Telangiectasia. Acquired causes of gingival bleeding include physical and chemical trauma, bacterial, viral and fungal infections, avitaminosis B2, B6, and K. Haematological conditions such as polycythaemia vera, thrombocytopenic purpura, leukaemia, leucopenia, multiple myeloma, and aplastic anaemia do cause gingival bleeding. Patients who have depressed immunity such as in acquired immunodeficiency syndrome (AIDS) may present with gingival bleeding. Patients who have connective tissue disorder such as systemic lupus erythematosus (SLE) can also bleed from the gingiva. The use of some drugs may cause gingival bleeding. Examples are anticoagulants, such as dicoumarol and heparin, excessive dose of salicylates, immunosuppressive drugs, corticosteroids, cyclosporin, phenytoin sodium and nifedipine.

Despite all these varied localized and systemic aetiological factors of gingival bleeding, incipient periodontal disease is not perceived as an illness and slowly increasing bleeding from the gums is considered a nuisance rather than a health problem [4].

This study is aimed at determining the perception of gingival bleeding of subjects resident in the Lagos Metropolis which will then be compared with their sex, age and periodontal status.

### Materials and method

Two hundred and seventy five (275) subjects were examined from secondary schools, and medical and community health out patient clinics of the Lagos University Teaching Hospital (LUTH). One hundred and fifty three (153) were females while one hundred and twenty-two (122) were males. The age range was 15 to 87 years with a mean age of 18.1 years (SD  $\pm$  17.05). To avoid prejudice, no subject was seen at the dental clinic. In assessing the periodontal status, the Community Periodontal Index of Treatment Needs (CPITN) was used. This index was described by Ainamo *et al.* (1982) [5], with a modification by Cutress *et al.* (1987) [6]. The codes were:

- 0 - No signs of periodontal disease
- 1 - Gingival bleeding after gentle probing
- 2 - Presence of supra or subgingival calculus
- 3 - Presence of pathological pockets 4 mm or 5 mm deep
- 4 - Presence of pathologic pockets 6 mm or deeper

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Duplicate readings of a pretest on twenty patients using this index were compared to calibrate for intra examiner reproducibility. Apart from the clinical examination, each subject completed a questionnaire which included demographic information. The researchers completed forms for subjects who were unable to complete their questionnaires.

The following questions were asked:

1. Do you bleed when you clean your teeth?
2. Do you think it is normal for gums to bleed?
3. Do you have gum disease?

For the survey, adequate sterile materials and instruments were used to prevent cross infection.

Results were analyzed using chi-square tests on a computer soft ware Epi-Info (Dean *et al.* 1990 [7]).

**Results**

Table 1 shows the age and sex distribution of subjects. There were 122 males and 153 females. the mean age was 18.1 (S.D. ± 17.05). Seventy-six (29.82%) claimed to bleed from the gums while one hundred and ninety-nine (70.18%) claimed otherwise.

**Table 1:** Age and sex distribution of subjects

Age	Sex				Total	%
	M	%	F	%		
15-24	72	59.0	92	60.1	164	59.64
25-34	20	16.4	30	19.6	50	18.18
35 and above	30	24.6	31	20.3	61	22.18
Total	122	100.0	153	100.0	275	100.00

Mean = 18.1 years      Standard deviation ± 17.05

Table 2 shows that 33.3% males and 37.80% females out of those who claimed to bleed from the gingivae perceived bleeding from the gingivae to be normal,  $X^2 = 0.853$  and  $P = 0.386$ ;  $P > 0.05$ . Twenty seven perceived gingival bleeding as normal while one hundred and seventy two subjects perceived it as not normal,  $X^2 = 0.506$ ,  $P = 0.48$ ;  $P > 0.05$  (Table 4).

**Table 2:** Sex distribution of subjects according to claimed bleeding from the 'gums'

Response to claimed bleeding	Sex				Total n = 275	% of Total
	M	%	F	%		
Yes	36	47.38	40	52.62	76	29.82
No	90	47.23	109	52.77	199	70.18

**Table 3:** Sex distribution of subjects who claimed to bleed from the gums and their perception

Perception	Sex				Total	%
	M	%	F	%		
Normal	9	33.33	15	37.50	24	31.58
Not normal	27	66.67	25	62.50	52	68.42
Total	36	100.00	40	100.00	76	100.00

$X^2 = 0.853$        $P = 0.386$ ,  $P > 0.05$

The results also showed that 38.71% of the subjects who claimed to bleed from the gums thought it was normal while 13.5% of those who claimed not to bleed, believed it was normal;  $X^2 = 9.55$ ,  $P = 0.002$ ;  $P < 0.05$  (Table 5).

Thirty (39.47%) of those who claimed to bleed from the

gums thought they had gum disease. Out of those who claimed to bleed from the gums, only 3.95% claimed they did not know if they had gum disease (Table 6).

**Table 4:** Sex distribution of subjects who claimed not to bleed from the gums and their perception of it

Perception	Sex				Total	%
	M	%	F	%		
Normal	10	11.11	17	15.60	27	13.57
Not normal	80	88.89	92	84.40	172	86.43
Total	90	100.00	109	100.00	199	100.00

$X^2 = 0.506$        $P = 0.48$ ,  $P > 0.05$

**Table 5:** Distribution of subjects according to claimed bleeding from the gums and their perception of it

Perception	Claimed bleeding				Total	%
	Yes	%	No	%		
Normal	24	38.71	27	13.57	51	18.55
Not normal	52	61.29	172	86.43	224	81.45
Total	76	100.00	199	100.00	275	100.00

$X^2 = 9.56$        $P = 0.002$ ,  $P < 0.05$

**Table 6:** Distribution of subjects according to claimed bleeding from the gum and response to having gum disease

Perception	Response to having gum disease				Don't know	%
	Yes	%	No	%		
Yes n = 76	30	39.47	43	56.58	3	3.95
No n = 199	17	8.54	164	82.41	18	9.05
Total n = 275	47		207		21	

One hundred and sixty four (82.4%) of those who claimed not to bleed from the gums believed they do not have gum disease. None of the subjects seen had healthy periodontal status. The majority of the subjects (54.90%) scored code 2 (Table 7)

**Table 7:** Age distribution of subjects according to CPITN (max) results

Age group	CPITN (max) results								Total	%
	0	%	1	%	2	%	3	%		
15-24	0	0.00	19	6.91	107	38.9	32	11.4	158	57.4
25-34	0	0.00	5	1.81	116	41.6	16	5.91	137	49.5
35 and above	0	0.00	13	4.73	111	39.6	22	8.0	156	56.4
Total	0	0.00	37	13.45	334	120.1	70	25.4	441	159.3

**Discussion**

This study shows that about a quarter of the subjects claimed to bleed from the gums during oral prophylaxis. However, from their clinical examination none of these subjects was found to have a healthy periodontal status. This finding signifies the tendency for the presence of gingival bleeding contrary to their claims. According to Muhlemann and Son (1971) [1] and Lenox and Kopeczyk (1973) [2] gingival bleeding is one of the earliest symptoms of periodontal disease.

Some of the subjects believed that it was normal to bleed from the gums, although there was no significant difference between the two sexes concerning this view ( $P > 0.05$ ). (Tables 3 and 4). However it was observed that more than a



third (38.71%) of those who claimed to bleed from the gums perceived it as normal (Table 5). This agrees with the observation by Ainamo and Ainamo (1981) [4] that incipient periodontal disease is not perceived as an illness and slowly increasing bleeding from the gingiva (gums) is considered a nuisance rather than a health problem. Thirteen and one half of those who claimed not to bleed from the gums perceived the sign as normal.

This shows that the majority of this category of subjects believed that bleeding from the gum is abnormal. The fact that these subjects claimed not to bleed from the gums which clinical examination proved otherwise (Table 7), shows that they are not aware of this sign in their mouths. The response that bleeding from the gums was abnormal may show their knowledge concerning the presence of this sign. This fact could also have made them to deny bleeding from the gums. There was significant difference in the perception of gingival bleeding by those who claimed to bleed from the gums and those who claimed otherwise, ( $P < 0.05$ ) (Table 5).

It is interesting to note that almost half of those who claimed to bleed from the gums admitted to having gum disease (Table 6) yet none requested for treatment since this survey was carried out in places other than the dental clinics or hospitals. This observation also agrees with that of Ainamo and Ainamo (1981) [4] that incipient periodontal disease is not perceived as an illness and slowly increasing bleeding from the gingiva (gums) is considered a nuisance rather than a health problem.

According to Chilton and Miller (1982) [8] and Brown (1983) [9], lack of public concern and general unawareness of the consequences of periodontal disease have contributed to its broad prevalence. Only in the later stages of periodontal disease with deep pocket formation and tooth mobility does a patient seek treatment.

The fact that the majority of subjects seen also claimed not to have gum disease (Table 6) which clinical assessment proved otherwise, shows lack of awareness of the presence of the disease. Unlike caries, the nature of periodontal disease results in low levels of patient discomfort. This insidious nature makes recognition difficult [10].

In conclusion, this study shows poor perception of gingival bleeding as an indication of periodontal disease.

Efforts should be made to educate the public to relate bleeding from the gums as an indication of the existence of a disease. The mass media could be used extensively for this purpose. An example is the phrase "when gum bleeding persists, see your dentist".

This could be an adjunct to an advertisement of any oral prophylaxis materials such as toothpastes, toothbrushes, or mouth washes.

Most importantly there is the need for the medical community to take cognisance of gingival bleeding and educate their patients and the public at large.

## References

1. Muhlemann HR, Son S. Gingival sulcus bleeding a leading symptom in initial gingivitis. *Helv Odontol Acta*, 1971; 15:107.
2. Lenox JA, Kopeczyk RA. A clinical system for scoring a patient's oral hygiene performance. *J Am Dent Assoc* 1973; 86:849.
3. Manson: Periodontics. Fourth Edition. Henry Kimpton Ltd. London 1986; 6-7.
4. Ainamo J, Ainamo A. Prevention of periodontal disease in a mixed dentition. *Int Dent J* 1981; 31: 125-132.
5. Ainamo J, Barns D, Beagrie G, Cutress T, Martin J, Sardo-Infirm J. Development of the World Health Organisation (WHO) Community Periodontal Index of Treatment Needs (CPITN). *Int Dent J* 1982; 8: 23-28.
6. Cutress TW, Ainamo J, Sardo-Infirm J. The Community Periodontal Index of Treatment Needs (CPITN). Procedure for population groups and individual. *Int Dent J* 1987; 37: 222-233.
7. Dean AD, Dean JA, Burton JH. *Epi Info Version 5. A word processing database and statistics programme for epidemiology on micro computers.* Centres for disease control. Atlanta, Georgia, USA 1990.
8. Chilton TW and Miller MF. *Epidemiology: International Conference on research in the biology of periodontal disease.* University of Illinois 1981; 119-143.
9. Brown RH. Towards better periodontal health. Editorial *New Zealand Dent J* 1983; 79-31.
10. Brady WF. Periodontal disease awareness. *J Am Dent Assoc* 1984; 105(2): 231-236.