



## Substance Use and Oral Health Sensations among a Population of Nigerian Motor Park Workers

Adedigba MA<sup>1\*</sup>, Oni Adeyemi<sup>1</sup>, Adedigba JA<sup>2</sup> and Sola ASA<sup>3</sup>

<sup>1</sup>Department of Preventive and Community Dentistry, Obafemi Awolowo University, Nigeria

<sup>2</sup>Department of Bioethics, Case Western University, USA

<sup>3</sup>Demography and Social Statistics, Obafemi Awolowo University, Nigeria

### Abstract

**Objectives:** To determine patterns of substance use and Oral health sensations among substance users.

**Methods:** Questionnaires were administered to MPWs about drug history and oral health sensations experienced (recalled).

**Results:** There were 69% current substance user, 10% past users and 21% had never used any form of substance. Alcohol top the list of substance use (74%), followed by combine form of Analgesics (46%), Marijuana was next (41%), tobacco use (38%), Caffeine (34%), Cocaine (15%) and Heroine (3%). The uses of tobacco, Marijuana, Cocaine, Alcohol were statistically associated with dryness of the mouth ( $p \leq 0.05$ ). Intra oral stains was significantly associated with tobacco use, Marijuana, Cocaine and alcohol ( $p \leq 0.05$ ).

**Conclusion:** Substance use leads to range of short term oral health sensations.

**Keywords:** Oral health sensations; Motor park workers; Oral tissues

### Introduction

World Health Organisation (WHO) defined “abuse” as non-medical or unsanctioned patterns of use, irrespective of consequences. Psychoactive substance misuse is the “use of a substance for a purpose not consistent with legal or medical guidelines, as in the non-medical use of prescription medications”. The term is preferred by some to abuse in the belief that it is less judgemental [1].

The use of substance is a growing global problem worldwide [2] and developing countries like Nigeria is not left behind. Alcohol was the most commonly used substance (56%) at any time while 14% are users within the last one year. Current smokers were about 3%. Sedatives users were 4% while Marijuana or cannabis smokers were 0.4% [3].

It is a common practice in traditional African settings to use tobacco and alcohol as culturally acceptable substances [4,5]. The reason for unguided or unregulated access to alcohol has been suggested to be due to minors been sent on errand by adults to buy alcohol or tobacco from vendors without the vendors asking questions [6]. Rituals and traditional occasions employed the use of tobacco and alcohol [5,6]. There are various laws prohibiting the use of illicit drugs in Nigeria [7] which has not only been enforced but farmers grow Cannabis to augment their income (United Nations Office on Drugs and Crime [UNODC] [8]. Motor parks have become a safe haven for sale and use of many illicit substances especially cannabis in Nigeria [6].

The prevalence of a lifetime consumption estimates prescription drug abuse in Nigeria may be as high as 10.6% [8]. Previous reports has implicated drivers in Nigeria with various substance uses such as Kolanut, Alcohol, Marijuana/ Cannabis, tobacco uses (smoking and smokeless), caffeine and other Central Nervous System (CNS) active substances [9,10]. These substances are known to significantly improve their driving performance and keep sleep away for hours but impair driving perfection that may lead to motor vehicle accidents (MVAs). MVAs can result from substance use because they affect the CNS. MVAs in Nigeria have been associated with alcohol consumption among drivers [11] which constituted about 50% of MVAs [12]. This finding was similar to that of Western Countries [13]. Other reasons for substance use are social reasons (rave parties, ecstasy, recreational dance circuit [14] and other stress reduction conditions [10,15] reported 67.2%

### OPEN ACCESS

#### \*Correspondence:

Adedigba MA, Department of Preventive and Community Dentistry, Obafemi Awolowo University, Nigeria, E-mail: ademich2002@yahoo.com

Received Date: 01 Sep 2016

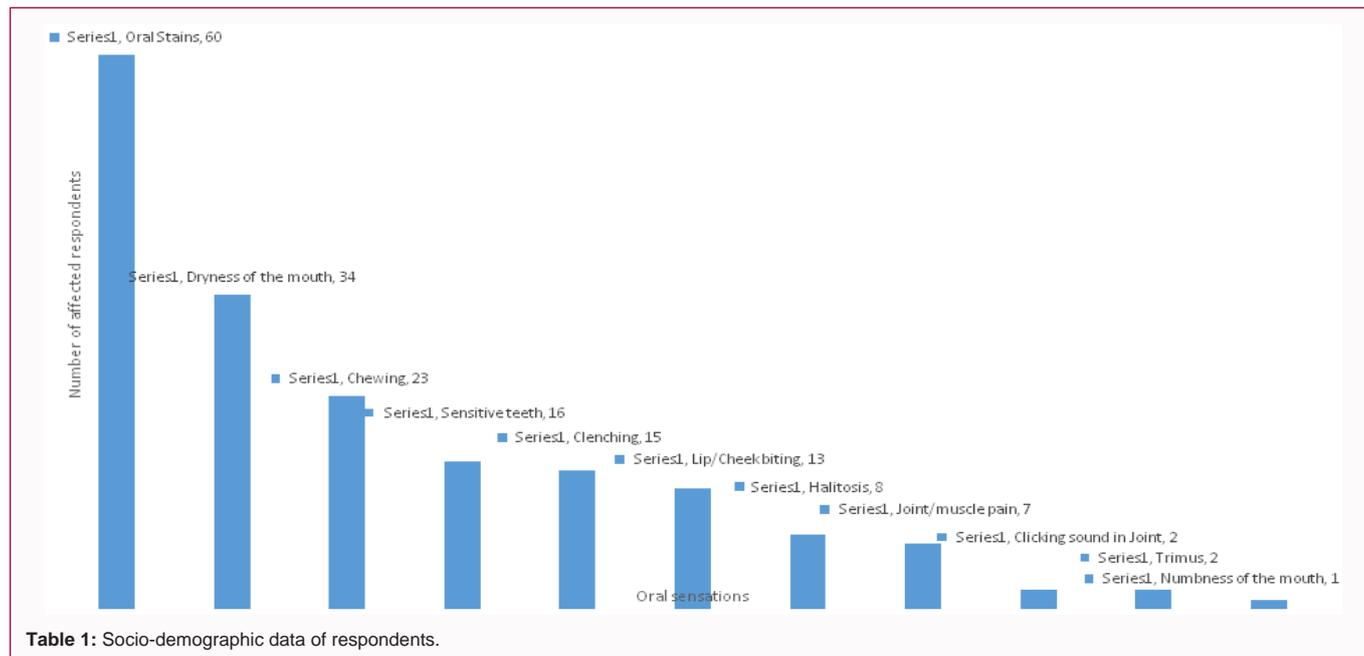
Accepted Date: 17 Oct 2016

Published Date: 31 Oct 2016

#### Citation:

Adedigba MA, Adeyemi O, Adedigba JA, Sola ASA. Substance Use and Oral Health Sensations among a Population of Nigerian Motor Park Workers. *J Dent Oral Biol.* 2016; 1(2): 1006.

**Copyright** © 2016 Adedigba MA. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



prevalence of alcohol use in Port Harcourt and Ile-Ife in Nigeria.

Research have shown that there are long term clinical effects of substance abuse on oral tissues. This include dental caries common with Heroin [16], mouth ulcerations associated with Cocaine [17] and tooth wear with “ecstasy” [18]. There are short term oral effects or oral sensations of substance use which may include nausea, sweating, hallucinations, exhaustion, chills, raised body temperature, tremors, muscular cramps, blurred vision and anxiety [19] (Figure 1).

Many studies in Nigeria have been designed majorly to present baseline data on substance use among its populace in different parts of the country [10,11,20-24,]. However, little has been reported on the oral health sensations associated with substance use, the sources and extensive reasons for using them. This study will start to assist to know oral health sensations of substance use which will help the oral physicians to spot substance user early from reported symptoms. This is intended to introduce a multidisciplinary approach to management and control of substance use. Therefore this study will progress with the following objectives to: determine patterns of substance use, abuse and Oral health sensations following substance use among Motor Park workers in Ile-Ife, Nigeria.

### Materials and Methods

The study was carried out in eight major motor parks in Ile-Ife purposively selected to capture the diversity of motor park workers in the city. The city of Ile-Ife is along the major road networks leading to many other states such as Ekiti, Kwara, Ondo, Edo in the southwestern Nigeria and Kogi state (Middle belt). It is also a major bypass to Abuja the Federal Capital Territory, and beyond (Northern regions). It serves as a major stopover for those motorists travelling to other regions in Nigeria. So, it represents a diversity of motor park workers from various cultural, socio-demographic and beliefs (Table 1).

A questionnaire was developed from existing literature [6,14] to assess previous drug abuse and self-reported oral health symptoms while using drugs. The Motor Park Workers were asked if they had ever used the following drugs: alcohol (‘Paraga’ is a combination

Table 1: Socio-demographic data of respondents.

Age grouping (years, n=98)	No	%
10-20	11	11.0
21-30	50	50.0
31-40	27	27.0
41-50	10	10.0
<b>Marital Status (n=100)</b>		
Single	18	18.0
Married	79	79.0
Widowed	1	1.0
Divorced	1	1.0
Separated	1	1.0
<b>Occupation</b>		
Driver	95	95.0
Conductor	1	1.0
Union worker	3	3.0
Others	1	1.0
<b>Religion</b>		
Christian	62	62.0
Islam	38	38.0
<b>Level of Education</b>		
None	9	9.0
Primary	29	29.0
Secondary	58	58.0
Tertiary	4	4.0
<b>Income (per month)</b>		
0.0-10000 (<US\$100)	14	14.0
11000-20000 (<US\$200)	81	81.0
21000-30000 (<US\$300)	5	5.0

of Spirit and herbs (‘Agbo’); tobacco (smokeless, cigarettes, cigar, or pipe); Indian Hemp or Cannabis (‘Igbo’, ‘Gbana’, ‘Marijuana’);

**Table 2:** Types of Substance abuse/misuse among Road transport workers.

S/N	Type of substance(s)	Yes (N, %)	NO (N, %)
1	Cigarette, tobacco snuff/chewing	32 (40.5)	47 (59.5)
2	Alcohol ('Paraga*', Beer, Palmwine,)	58 (73.4)	21 (26.6)
3	Kolanut, Caffeine	27 (34.2)	52 (65.8)
4	Analgesics ('Alabukun', Panadol extra)	37 (46.8)	42 (53.2)
5	Indian Hemp/ Marijuana ('Igbo*', 'Ghana*')	35 (44.3)	44 (55.7)
6	Cocaine	14 (17.7)	65 (82.3)
7	Heroin	03 (3.8)	76 (96.2)

\*Paraga = Spirit added to Herbs in form or roots and bark of medicinal plants

\* Local names for Marijuana

**Table 3:** Showing sources of substance abuse at Motor Parks.

S/N	Sources of obtaining substance(s)	Yes (N, %)	NO (N, %)
1	Kiosks in motor parks	15 (20.3)	63 (79.7)
2	Kiosks outside motor parks	39 (49.4)	40 (50.6)
3	Hawkers	19 (24.1)	60 (75.9)
4	Friends	35 (44.3)	44 (55.7)
5	Relatives	3 (3.8)	76 (96.2)
6	Father	0 (0.0)	79 (100.0)
7	Mother	0 (0.0)	79 (100.0)

Opiates such as Cocaine/ Heroin; extra medical use of sedatives, stimulants, analgesics in form of 'Alabukun', 'Adipo', Panadol extra (Table 2). The questions were selected after careful review of current literature on oral health and substance abuse in relation to immediate and short term systemic effects of substance use. The questionnaire was piloted among a small group of Motor Park Workers in one of the motor parks and language and cultural differences were adjusted for. OA (one of the authors) was single handed trained and standardize to administered the questionnaire to all participants. The data were entered using Excel and exported to SPSS (version 16) for statistical analysis using descriptive and inferential statistical techniques.

## Results

Majority of Motor park Workers were men (99.0%) with 79.0% of them married and earned wages below US \$200.00 (<N20, 000.00) per month. Men between the ages of 21-30 years constituted the bulk of the respondents. The level of education of the majority (96.0%) ranged from no formal to secondary school level.

There were 69% current substance user, 10% past user and 21% had never used any form of substance. The range of substance use among the motor park workers were as follows 12 respondents has being using substance for 0 to 10 months (<1year), 50 respondents for 11 to 20 months (<2years), 13 respondents for 21 to 30 months (<3years), 19 respondents for 31-40 months (<4years), 5 for 41-50 months (<5years) and 01 for 51-60 months (<6years).

The commonest source of initiator to substance use was peer group/friends (74.7%) followed by others (co-workers, neighbours etc.) 15.2%, relatives was 1.3%, father 1.3% and non from mother.

The preference of time of substance use was that many of the MPWs preferred to use substance after the day's work (78.5%), 44.3% when off duty, 30.4% before the day's work and only 10.1% during work hours.

The association between oral health sensations and substance were tested, there were statistical significance association between

the tobacco use dryness of the mouth ( $\chi^2 = 8.31$ ,  $p = 0.004$ ), Jaw pain ( $\chi^2 = 5.23$ ,  $p = 0.038$ ) and intra oral stains ( $\chi^2 = 12.89$ ,  $p = 0.000$ ). The use of Marijuana and Cocaine were statistical significantly associated with dryness of the mouth ( $\chi^2 = 20.66$ ,  $p = 0.000$ ,  $\chi^2 = 17.23$ ,  $p = 0.000$  respectively) and intra oral stains ( $\chi^2 = 15.45$ ,  $p = 0.000$ ,  $\chi^2 = 5.38$ ,  $p = 0.017$  respectively). The use of alcohol among the MPWs yielded significant association with oral sensations such as dryness of the mouth ( $\chi^2 = 9.66$ ,  $p = 0.002$ ), Clenching of teeth/jaws ( $\chi^2 = 3.41$ ,  $p = 0.0$ ), sensitivity of teeth ( $\chi^2 = 4.25$ ,  $p = 0.056$ ), biting of lips/cheeks ( $\chi^2 = 5.63$ ,  $p = 0.016$ ) and intra oral stains ( $\chi^2 = 22.44$ ,  $p = 0.000$ ).

The number of motor park workers (MPWs) who would like to quit substance use was 69.5% compared with 30.4% not willing to do so. Regarding the government banning the substance use in motor parks 54.4% considered it to be very good, 21.5% regard such a law as good, 5.1% stand at the midpoint while 7.6% and 11.4% feels it will be a bad and very bad decision respectively.

## Discussion

A total 100 of consecutive, voluntary and consented Motor Park Workers (MPWs) were interviewed in this study. Substance use was found among 79 (79%) of them (Table 3). Working at the Motor Park is majorly a men's business in Nigeria as obvious in the sample population and it's very common among able bodied and economically viable individuals. Since it is found majorly among poorly educated, there is equal association with low income earnings.

The use/misuse of substance among the studied population was very high either currently or in the time past. The most common substance in use among the MPWs was Alcohol. This was in agreement with the findings of Gboyega [15]. It was found in the present study to be higher than previously reported [15] but much less than that reported by another researcher [25]. This is on sale in the various (Motor Park) MP in form of local concoction called "Paraga" (which is local herbs/ plant root soaked into alcohol). Alcohol is not permitted at MPs in Nigeria like most countries of the world and so the users and sellers find a safe haven in MPs [6] by disguise, adding local herbs to alcohol which are popular source of medicine among Africans. Alcohol is being associated with impaired judgment and increased motor vehicular accidents by previous researchers [9,11,12,] even in the Western countries [13]. Un-prescribed medicine usage was common among Nigerian population and not just among MPWs which was similar to the submission of past studies [6,14]. The use of Marijuana was the third most common substance use followed by tobacco (smokeless and or smoked), Caffeine (kolanut) use and narcotics (Cocaine and Heroin). This was in agreement with previous findings among MPWs in Nigeria [10,11]. These substances have not only been previously reported to significantly improve driving performance and keep sleep awake for hours but also impair driving perfection that may lead to motor vehicle accidents (MVAs). MVAs can result from substance use because they affect the CNS. For the control of substance use in the Motor Parks there is great need of control of the sale of such in and around the Motor parks. These are based on the fact that majority obtain these substances from kiosks within and surrounding of the Motor Parks. Also, more substance users were first introduced to it by their friends. The present study does not suggest such introduction from close family members (Parents and relatives). Control programs in other words should be focused on peer groups (peer pressure control) and sellers within and around the Motor Parks.

**Table 4:** Reasons for using Substance abuse among Motor Park workers.

S/N	Reasons	Yes (N, %)	No (N, %)
1	To feel high	49 (62.0)	30 (38.0)
2	To keep alert	44 (55.7)	35 (44.3)
3	To cope with frustration	41 (51.9)	38 (48.1)
4	Enjoyable taste of substance	44 (55.7)	35 (44.3)
5	To control temper	19 (24.1)	60 (75.9)
6	Taken with herbal as medicinal	15 (19.0)	64 (81.0)
7	To initiate sleep	33 (41.8)	46 (58.2)
8	For more energy	41 (51.9)	38 (48.1)
9	To boost morale	48 (60.8)	31 (39.2)
10	To imitate others	46 (58.2)	33 (41.8)
11	For relaxation	59 (74.7)	20 (25.3)
12	To ward off cold	37 (46.8)	42 (53.2)
13	To increase libido	12 (15.2)	67 (84.8)

There were other reasons for consumption of substances among MPWs which are not different from those already reported by McGath and Chan [14] and others for stress reduction [10] (Table 4).

In the present study it was difficult to study the individual effects of the substances use/misused because majority are poly-substances user which was similar to the study population reported by McGrath and Chan [14]. Respondents from recall reported that they experienced varied level of oral health sensations following substance use. Intra oral stains (brown to black colouration) top the list which was expected. It is commonly associated with extrinsic stains from Kolanuts, Tobacco and Marijuana [26]. This may lead to increase accumulation of plaque and calculi and the squalae of this are occurrences of caries and periodontal diseases. Dryness of mouth (Xerostomia) was very common among the respondents studied which were similar to the findings in other studies [27,14]. Cannabis use was associated with dryness of the mouth similar to findings of [27] and intra oral stains. Dryness of the mouth was found in alcohol use similar to the works of [28,29]. In alcoholics salivary gland function may be impaired with associated asymptomatic enlargement of the parotid glands and sometimes the submandibular gland as well [30]. At the beginning, increase flow of saliva is observed with high concentration of alcohol but fatty degeneration of the salivary glands may take place for unexplained reasons, leading to dryness (xerostomia). Among alcoholics, increased incidence of dental caries, periodontal disease, and tooth loss has been described [30]. Grinding of teeth/ bruxism and Temporomandibular joint (TMJ) disorders/pain in the jaw muscle/TMJ joint which are commonly associated with the use of cocaine [31] were found not significantly associated in the present study but there was significant association with tobacco use. Grinding of teeth could raise concern for tooth wear problem sooner or later in such population. The use of alcohol was statistically significantly associated with Chewing something, Clenching of teeth, clicking sound in the TMJ during eating, cheek biting, numbness, sensitive teeth and except for halitosis as it were in agreement with findings from other studies among substance users [14,25,31]. Alcohol usage among MPWs was with added roots and herbs mostly accounting for the stains on the teeth. The act of clenching, chewing something may result from the stimulant effect of alcohol. These habits may increase the incidence of TMJ dysfunction syndrome in the population studied. Oral Cocaine but not heroin uses are associated to dryness ( $p < 0.001$ ). We expect to observe numbness in

the present study among the MPWs studied which usually resulted from the analgesic effect of cocaine/heroin on the CNS [25] this may cause poor dental care seeking behavior. The low number of respondents with numbness may be due to the small sample of Opiate user among the study population.

The quit intention of the majority of the MPWs should be urgently helped for quick realization; more so, the majority would like to support the possible government policy of banning the use of these substances.

## Conclusion

Substance use leads to a plethora range of oral health sensations of which dryness of the Mouth and oral stains are very common ones. Alcohol the most abused of all substances is the most statistically associated with oral health sensations.

## References

1. World Health Organisation. Abuse (drug, alcohol, chemical, substance or psychoactive substance). 2014.
2. United Nations Office for Drug Control and Crime Prevention. Global illicit drug trends. 2002.
3. Gureje O, Degenhardt L, Olley B, Uwakwe R, Udofia O, Wakil A, et al. A descriptive epidemiology of substance use and substance use disorders in Nigeria during the early 21<sup>st</sup> century. *Drug Alc Depend.* 2007; 91: 1-9.
4. Netting RN. Beer as a locus of value among the West African Kofyars. *American Anthropologist.* 1964; 66: 375-384.
5. Ayo-Yusuf O, Peltzer K, Mufamadi J. Traditional Healers' Perceptions of Smokeless Tobacco Use and Health in the Limpopo Province of South Africa. *Substance Use Misuse.* 2006; 41: 211-222.
6. Makanjuola VA, Oladeji BD, Gureje O. The Gateway Hypothesis of Substance Abuse: An Examination of Its Applicability in the Nigerian General Population Substance Use & Misuse. 2010; 45: 1558-1571.
7. The laws of Oyo State of Nigeria. Oyo State, Nigeria. 2000; 3: 55-82, 623-624.
8. United Nations Office on Drugs and Crime. Drug abuse: Nigeria country profile. Retrieved April 24, 2009.
9. Adekoya BJ, Adekoya AO, Adepoju FG, Owoye JFA. Driving under influence among long distance commercial drivers in Ilorin, Nigeria. *Int J Biol Med Res.* 2011; 2: 870-873.
10. Makanjuola AB, Aina OF, Onigbogi L. Alcohol and other psychoactive Substance use among tanker drivers in Lagos, Nigeria. *European Scientific Journal.* 2014; 10: 545-559.
11. World Health Organization. Global status report on road safety: Time for action. Geneva, Switzerland. 2009.
12. Welcome MO, Pereverzev VA. Limit of blood alcohol concentration: A major problem to solve in Nigeria. *European Psychiatry.* 2010; 25: 554.
13. New York Times 27<sup>th</sup>, May 2013 (also, The Punch Newspapers Thursday, June 27<sup>th</sup>, pg 56).
14. McGath C, Chan B. Oral health sensations associated with illicit drug abuse *Br Dent J.* 2005; 198: 159-162.
15. Gboyega EA. Psycho-spatial predictors of alcohol use among drivers in Ibadan, Nigeria: Implications for preventing vehicular accidents. *Internat J Alcoh Drug Resear.* 2012; 1: 1-10.
16. Rosenstein DI. Effect of long-term addiction to heroin on oral tissues. *J Public Health Dent.* 1975; 35: 118-122.
17. Quart AM, Small CB, Klein RS. The cocaine connection. Users imperil

- their gingiva. *J Am Dent Assoc.* 1991; 122: 85-87.
18. Brazier WJ, Dhariwal DK. Ecstasy related periodontitis and mucosal ulceration — a case report. *Br Dent J.* 2003; 194: 197-199.
19. Yacoubian GS Jr, Boyle C, Harding CA, Loftus EA. It's a brave new world: Estimating the prevalence and perceived harm of ecstasy and other drug use among club rave attendees. *J Drug Educ.* 2003; 33: 187-196.
20. Adelekan ML. Self-reported drug use among secondary school students in the Nigerian State of Ogun. *Bull Narc.* 1989; 41: 109-116.
21. Ihezue UH. Drug use among medical students at a Nigerian University: Part I. Prevalence and pattern of use. *J National Med Associ.* 1988; 80: 81-85.
22. Nevadomsky JJ. Drug use among university students: prevalence of self-reported use and attitude to use. *Bull Narc.* 1985; 37: 32-42.
23. Ogunremi O, Okonofua F. Abuse of drugs among Nigerian youths: A University experience. *African Journal of Psychiatry.* 1977; 3: 107-112.
24. Adelekan ML, Ndom' R, Imouokhome A. Monitoring Trends in Substance Use through a Repeat Cross-sectional Survey in a Nigerian University. *Drugs: education, prevention and policy.* 1996; 3.
25. Rees TD. Oral Effects of Drug Abuse. *Crit Rev Oral Biol Med.* 1992; 3: 163-184.
26. Scheutz F. Dental health in a group of drug addicts attending an addiction-clinic. *Community Dent Oral Epidemiol.* 1984; 12: 23-28.
27. Valentine JA, Scott J, West CR, St Hill CA. A histological analysis of the early effects of alcohol and tobacco usage on human lingual epithelium. *J Oral Pathol.* 1985; 14: 654-665.
28. Shellow WV. The skin in alcoholism. *Int J Dermatol.* 1983; 22: 506-510.
29. Rees TD. Dental management of the medically compromised patient. In: *Current Therapy in Dentistry.* McDonald RE, Hurt WC, Gilmore HW, Middleton RA, editors. CV Mosby, St. Louis. 1980; 3-30.
30. Christen AG. Dentistry and the alcoholic patient. *Dent Clin North Am.* 1983; 27: 341-361.
31. Friedlander AH, Gorelick DA. Dental management of the cocaine addict. *Oral Surg Oral Med Oral Pathol.* 1988; 65: 45-48.