

DO ACCOMPANYING PERSONS HAVE ANY INFLUENCE ON ADHERENCE TO POSTOPERATIVE INSTRUCTIONS GIVEN TO DENTAL PATIENTS? A STUDY OF TWO COHORTS OF PATIENTS.

¹Charles E. Anyanechi;

ABSTRACT

The study set out to evaluate the level of understanding and compliance to postoperative instructions and satisfaction to treatment received in two cohorts of patients, accompanied and unaccompanied, one week after forceps extraction of first mandibular permanent molar. It was a comparative study carried out over a three year period, using questionnaire administered to the two cohorts of patients. All patients claimed they understood post-operative instructions on the 7th day, but in control group 1.3% failed to swallow saliva. Some patients (accompanied 21.3%, control 25.0%) did not comply with resumption of normal day's activity after treatment (P= 0.596). In both groups, patients were satisfied with the treatment received. The outcome suggests that in presence or absence of accompanying persons, patients who have undergone extractions and were given post-operative instructions in verbal and written forms would adhere to instructions.

Keywords: *Comparative study, forceps extraction, post-operative instructions, compliance.*

INTRODUCTION

Like other surgical procedures, post-extraction instructions are given to patients after tooth extraction to promote wound healing, encourage comfortable and uncomplicated recovery period.^{1, 2} These instructions are imperative as it minimizes unnecessary pain, bleeding, infection and swelling among other morbidities and complications if the instructions are carefully and patiently given by the health care provider and meticulously carried out by the patients.^{2,3} Adhering to these instructions and carrying them out by the patients depend on their understanding and commitment to it in the immediate post-operative period.^{6,7} Sometimes, these instructions are given only verbally in a hurried manner without adequate

explanation to the patient, and concern if they actually understood them because of the busy clinic in some circumstances and the workload of the healthcare providers at certain periods.^{8, 9} Some researchers have stated that the main factors that could militate against the understanding of the post-operative instructions after dental extractions depend on how they are presented to the patient by the health care professionals and socio-cultural status of the patients.^{7, 10} Most researchers support the view that post-operative care instructions are best delivered to the patients by both the verbal and written methods which they believe improve compliance and patients' satisfaction.¹¹⁻¹³ In addition, good communication and rapport is critical in assisting patients to deal appropriately with post-operative care as

¹Charles E. Anyanechi;

*¹Department of Oral and Maxillofacial Surgery,
University of Calabar Teaching Hospital Calabar,
Nigeria/ Department of Oral and Maxillofacial Surgery,
University of Calabar, Calabar, Nigeria.*

Corresponding author:

Dr Charles E. Anyanechi

*Dept. of Oral and Maxillofacial Surgery,
University of Calabar Teaching Hospital Calabar, Nigeria.*

E-mail: ceanyanechi@gmail.com

Phone number: +2348100257825 OR +2348059383922

studies have shown that adequate postoperative education can improve patients' quality of life and satisfaction, and reduce post-operative morbidity and complications.²

⁴ Evidence suggests that patients with previous experience of minor oral surgery complied with post-operative instructions better than first timers.⁵ In the study environment, owing to the expectant surgical treatment given to the patients, some patients attending the dental clinic for care visit the clinic accompanied by relatives, guardian or friends while others attend unaccompanied.¹⁴ The implication of patients attending the dental clinic accompanied is scanty in the available literature. This study will evaluate the understanding and compliance to postoperative instructions, and satisfaction to treatment done one week after forceps extraction of first mandibular permanent molar in two cohorts of patients treated under local anesthesia who were attending the clinic for the first time in a tertiary health institution.

Methods

This study, which is comparative in design, prospectively evaluates the understanding and compliance to postoperative instructions, and satisfaction to treatment done in two cohorts of patients one week after forceps extraction of first mandibular permanent molar. Because it is a comparative study, the factors and criteria for both cohorts were the same (like age, gender, education) except the factor under study which is the attendant. Those patients accompanied on the first visit and those unaccompanied (control) formed the two arms of the cohorts. The first mandibular permanent molar was chosen for study because it is the most commonly extracted tooth in this community.¹⁵ The duration of the study was three years, June 2016 to May 2019. The sample size was determined as 60 subjects in each group with the use of PASS sample size software program. In order to accommodate dropouts, a larger sample size was used for the study. The procedures followed were in accordance with the ethical standards of the institutional committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Approval for the study was

obtained from independent Ethics Committee of the institution, in addition to obtaining informed consent from the research participants.

For the purpose of this research, the accompanying person may be one or more person(s), and is defined as an adult relative/guardian, living in the same house with the patient during the treatment irrespective of their socio-demographic status. Patients who were having the forceps dental extractions for the first time were selected. These are consecutive patients at the Dental and Maxillofacial Surgery Clinic of the tertiary health institution. Subjects aged between 27 and 45 years, who gave consent for the study, were healthy, not using any substance (alcohol and tobacco in any form) and had no functional limitation were studied. The patients who were excluded from the study were those that had a previous dental extraction, medical problem that will impair wound healing, could not attend scheduled appointment, and had some mental or psychological disorders, and difficulties in language comprehension. Those that had other teeth extracted during the study period were also excluded.

Informed oral and written consent was sought and obtained from the patients before inclusion in the study. The patients were also assured of confidentiality and that their names will not be published in the report. After due explanation of the study and necessary clarifications of issues raised, questionnaires were administered to the two cohorts of patients studied shortly before the extraction and during follow-up on the 7th post-operative day. Patients were allocated to each arm of the studied groups as they presented. Under the accompanied group, persons who accompanied the patients were all adults above 18 years of age, attained minimum of secondary education and were residing with the patients during the period of the treatment. The questionnaire (Appendix 1) centered on socio-demographic profiles, types of instructions given to the patients, compliance to the instructions and satisfaction of the patients with the treatment/care provided. Also for the study group only, the questionnaire includes section on stating

reason(s) for accompanying patients to the dental clinic by the attendant(s).

All the patients underwent forceps dental extraction of first mandibular permanent molar under local anesthesia (2% lidocaine, 1:80, 000 adrenaline) and were given both verbal and written instructions thereafter. The verbal and written instructions were the same, but the verbal instructions were given in English, and if need be for better comprehension in native language by the same dental surgery assistant. The instructions were given to the patients before and after the forceps extraction, and for the accompanied (study) group in the presence of the person(s) who escorted them to the clinic. To ensure comprehension of the instructions given to them, they were asked to rehearse the instructions before the procedure was carried out. Using the questionnaire on the first day of the visit, details of the patient's age, gender, and formal education which formed the first section was recorded before the operation commenced. In the second section of the questionnaire were types of instructions given to the patients after treatment while the third section dealt with the compliance to the instructions, as well as the patient's satisfaction after the treatment. The third section was filled and completed by the patients on the 7th post-operative day. The fourth section was for those in the study group only, and was filled on the first visit by person(s) who accompanied patient (Appendix 1). When there is more than one person accompanying a particular patient, this part of the questionnaire was jointly filled by them.

Statistical analyses were performed using EPI INFO 7, version 0.2.0, 2012 software package (CDC, Atlanta, GA, USA) and level of significance was set at $p < 0.05$. Chi square (χ^2) test is used to see if there is a difference in the distribution of two attributes, while Z-proportion test served to compare proportions of two samples and student's t test compared the means of the continuous variables between the two groups at a 95% confidence interval

Results

One hundred and eighty three (183) subjects were evaluated in the present study (n=90 in the study group, and n=93 in control). Out of these subjects, 32 (17.4%) subjects (15 in the study group and 17 in the control group) were excluded from the study due to their failure to meet inclusion criteria. The age of patients ranged from 27 to 45 years with mean age, 39.55 ± 1.02 years. The result in Table 1 shows there was equitable distribution of subjects in the two groups in terms of the demographic and educational attainment. All the patients claimed they understood the post-operative instructions given to them when it was assessed on the 7th post-operative day, although in the control group, 1.3% of the patients did not swallow saliva after the instructions were given to them post-operatively. Also, some patients (those accompanied 21.3%, control 25.0%) in both groups did not comply with resumption of normal activity as they continued with the day's activity (Table 2). The significance ($P = < 0.00001$, Table 2) was in favor of subjects in both cohorts who complied with the post-operative instructions. In both groups all the patients were satisfied with the treatment and care received, as none of them experienced clinically any of the criteria used for the assessment of satisfaction (Appendix 1). In the study group, antibiotics were prescribed post-operatively for 17.3% of the patients whereas in the control group, 22.4% had antibiotics after the surgery. Also, in the study group, the attendant(s) who accompanied the patients had reasons for accompanying the subject to the clinic. The reasons for accompanying patients to dental clinic were for emotional and psychological support by 75 (100%) attendants, assist patients remember instructions given to them after treatment, 75 (100%), enforce compliance to postoperative instructions, 67 (89.3%) and to know the actual cost of treatment, 9 (12%).

Table 1: Distribution of demographic and educational attainment of patients.

Variable	Accompanied No (%)	Control No (%)	Test	df	P-value
<i>Gender</i>					
Male	46 (61.3)	45 (59.2)	$\chi^2= 0.071$	1	0.789
Female	29 (38.7)	31 (40.8)			
<i>Age (Years)</i>					
Mean \pm SD	39.7 \pm 2.13	39.4 \pm 1.91	t = 0.2298	149	0.819
<i>Educational attainment</i>					
Primary	15 (20)	13 (17.1)	$\chi^2= 225$	2	0.894
Secondary	34 (45.3)	35 (46.05)			
Tertiary	26 (34.7)	28 (36.8)			

SD= Standard deviation

Table 2: Compliance with the post-operative instructions and satisfaction with treatment/care

Instruction	Study	Control	Z-test	P-value		
	No (%)	No (%)				
➤ Did not understand the instructions given	0	0	-0.9967	0.317		
➤ Rinsed the mouth during the first 24 hours	0	0				
➤ Did not swallow saliva after procedure	0	1(1.3)				
➤ Placed digit or tongue in the wound	0	0				
➤ Did vigorous mouth rinsing	0	0				
➤ Did not comply with routine oral hygiene procedure	0	0				
➤ Did not comply with dietary instruction	0	0				
➤ Did not comply with analgesic prescription	0	0				
➤ Did not comply with antibiotics prescription	0	0				
➤ Did not comply with resumption of normal activity	16(21.3)	19(25)			-0.5339	0.596
➤ Satisfied with treatment/care received	75(100)	76(100)			NaN	< 0.00001

Appendix 1: Questionnaire administered on the two cohorts of patients before and after tooth extraction.

Section I: Socio-demographic characteristics of the patients.

- Age
- Gender: a). Male b). Female
- Educational attainment: a). Primary b). Secondary c). Tertiary

Section II: Types of instructions given to the patients post-operatively.

Please follow all instructions carefully to avoid any unnecessary discomfort, bleeding, pain or infection.

If you have any difficulties or concerns following your surgery, please do not hesitate to call us or return to the clinic for a follow-up examination. Call this phone number: 08100257825 OR 08059383922 in case of an emergency.

Immediately Following Surgery

- Do not remove or displace the gauze pad placed over the surgical area, apply pressure on it by biting down until the bleeding stops, swallow saliva while doing this.
- Restrict your activities today, and resume normal activity when you feel you can.
- Do not suck on a straw, spit, and smoke, take alcohol or substances.
- Avoid putting your tongue or finger around the wound.
- Restrict your diet to liquids and soft foods which are comfortable for you to eat. Eating will be done when the local anesthesia wears off.
- You can drink water, but do not gargle with it. Avoid vigorous mouth rinsing.
- Avoid rinsing your mouth during the first post-operative day or while there is bleeding. Slight bleeding, oozing, or redness in the saliva may occur. Excessive bleeding may be controlled by placing a gauze pad over the area and biting firmly for thirty minutes on it while swallowing saliva. Repeat if necessary. If a dampened tea bag is available it can also be used in place of gauze or cotton wool.
- If there is swelling on the side operation was done, place ice packs.
- Take the prescribed pain medication as soon as you begin to feel discomfort. This will usually coincide with the local anesthetic becoming less effective. Also take antibiotics if it was prescribed for you. Continue to take the medication for the specified time period, even if the symptoms go away. Report to the clinic in case of any unfavorable reaction or event while taking the drugs.

Next day

- Commence routine oral hygiene procedure 24 hours after the tooth extraction by brushing your teeth, can use dental floss if need be. Avoid brushing near the extraction site for the first 72 hours after the extraction.
- Use warm water salt solution to rinse every 4 hours and after meals to flush out particles of food and debris that may lodge in the extraction site. Prepare this by putting teaspoon level of salt in a glass of Luke warm water; stir the solution, use minimum of 6 tumblers a day for 7 days.

- Normal activity can be resumed the following day after the surgery as can be tolerated by you.
- If you still have severe pain 3 to 4 days after the extraction, report to the clinic.

Section III: Compliance with the post-operative instructions and satisfaction with treatment/care

✓ Tick the options as appropriate if true or X if untrue.

Variable	Study Group	Control
➤ Did not understand the instructions given		
➤ Rinsed the mouth during the first 24 hours		
➤ Did not swallow saliva after procedure		
➤ Placed digit or tongue in the wound		
➤ Did vigorous mouth rinsing		
➤ Did not comply with routine oral hygiene procedure		
➤ Did not comply with dietary instruction		
➤ Did not comply with analgesic prescription		
➤ Did not comply with antibiotics prescription		
➤ Did not comply with resumption of normal activity		
➤ Which of the following is worrying you now?		
▪ Pain persists around extraction site.		
▪ Painful mastication using that side of the jaw.		
▪ Shocking sensation around extraction site on taking hot or cold drink/food.		
▪ Swelling at the extraction site		
▪ Bleeding from extraction socket		
▪ Others (specify).....		
➤ Satisfied with treatment/care received		

Section IV: For the study group only, person(s) who accompanied patient

State reason(s) for accompanying patient to the dental clinic

DISCUSSION

Over the last three decades, nearly every oral surgical textbook has included an example of what the authors considered to be a well-written post-operative instruction form containing 9 to 25 distinct items that vary in scope and content to be given to subjects after forceps dental extraction and other oral surgical procedures.⁷ There has been very little consistency in the guidelines provided and the issue of readability and understanding of such forms by the patients have not been achieved in some cases because of some complex words, which include dental and surgical jargons.^{13, 16} In addition, sometimes verbal instruction is delivered under stress, in a hurried manner or when the patient is still anxious after the surgical procedure without the professional taking into consideration

whether the patient understood them or not.^{17,}

¹⁸ These factors have impacted negatively on patients' compliance to post-operative instructions and satisfaction to treatment and care provided by the health care professionals with its attendant adverse clinical consequences.^{3,10,12}

The outcome of this study suggests that in the presence or absence of accompanying persons, patients who have undergone forceps dental extractions and were given post-operative instructions in verbal and written forms will adhere to the instructions resulting in improved compliance and satisfaction with treatment and care provided. Although there are differences in study design when previous studies are compared with the present one, this result to some extent supports the earlier view of some researchers^{19,21} who stated that patients with lower level

of pre-operative anxiety, higher socio-cultural status and who are given both verbal and written information about the post-operative course will strictly follow such instructions resulting in a better treatment outcome. The influence of person(s) who accompany patients to dental clinic for forceps dental extraction on the outcome of the treatment is scanty in the literature. It is expected that the understanding of post-operative instructions by both the patient(s) and the accompanying person(s) and subsequent implementation by the patient(s) are factors that influence recovery from the procedure and improves patients' quality of life during this period. Although there are differences in the study design between the present study and that of Alvira-González and Gay-Escoda,⁹ who found that there were no statistical differences in adherence to postoperative guidelines between the groups they studied irrespective of how the instructions was presented to the patient. On the contrary, Atchison et al.,¹⁹ observed in their study that some subjects failed to remember or properly interpret postoperative instructions whether given to them verbally, in written form or by combination of both methods which negatively affected the outcome of treatment of the subjects. The value of the accompanying person in this study is the expected influence in ensuring adherence to the post-operative instructions. This influence may be based on established relationship between the patient and the accompanying person such that both parties are living together in the same house. The patients in this study were attending the clinic for the first time, and this seems not to have negatively affected the way they adhered to the instructions whether they were accompanied by relatives, guardian/friends or not. This is probably because the instructions were given to them in clear, simple and understandable worded terms. Their level of educational attainment also seemed not to be a factor in the present study as there was no significant difference between the cohorts in this regard. Alexander⁷ emphasized that dental professionals particularly those in the surgical specialties should pay attention to the phrasing, jargon, and terminology used in

their post-operative instruction form, office brochures and informed consent forms. This researcher further stated that these forms should be written in very simple English that will be easily understood by the subjects without necessarily using dental jargons that will be incomprehensible to the patients.⁷ Unlike the present study that age was not studied and no significant difference between the cohorts concerning age, some authors^{3,7,10} observed that age and educational attainment of subjects does not have significant effect on compliance to post-operative instruction, so long as the instructions are given in clear simple worded terms by using local or foreign language that the patients are familiar with. Weiner and Lovitt,²² also found that school years attained when used as an index may be a poor yardstick of a patient's ability to understand, comply and carry out post-operative instructions. In addition, Baker et al.²³ noted that the amount of information forgotten is not related to a patient's intelligence. However, some authors^{11, 24, 25} pointed out that verbal or a combination of verbal and written instructions are preferred by most patients, particularly those with lower education than written instructions alone. In this study, the treatment outcome and care of the patients accompanied to the clinic did not significantly differ from those unaccompanied. The major reasons for person(s) accompanying patients to the dental clinic are for emotional and psychological support; help the patient to remember instructions given to them thereafter and to assist in enforcing compliance to post-operative instructions. However, certain authors noted that sometimes translations and interpretations of the instructions provided by lay friends or relatives may be inaccurate or misleading and inconsistent with the actual information provided by the health care provider.^{5, 24} The way the post-operative instructions were given to the two cohorts of patients studied probably circumvented this factor and led to good compliance and satisfaction after treatment. Written instructions should reinforce verbal instructions, not replace them, and both should be given to patients. It should be noted that without the written reinforcement, the

understanding and retention of verbal instructions over a lengthy period of recovery cannot be assured whether the patient is accompanied to the clinic or not.^{11,25}

One (1.3%) patient in the control group refused to swallow saliva after the procedure. This instruction is very important immediately post-operatively and cannot be compromised if one is to prevent lyses of blood clot that trigger off bleeding from the extraction socket. Although, the patient did not have complication and was satisfied with the treatment and care provided, several variables could interfere with adherence to post-operative instructions which made Alexander⁷ to suggest adapting the instructions to the needs of each patient or case. It is important to meet the needs of each patient and provide full details of the post-operative course as well as the consequences of not adhering to the post-operative instructions. Sufficient patient education when provided after dental extractions has been shown to improve patient compliance and satisfaction and decrease post-operative morbidity and complications.^{3, 12} This is particularly important in this series as some patients in both study groups though not statistically significant did not comply with resumption of normal activity. They continued with the day's activity immediately after the procedure. This may be due to family or economic reasons, or social responsibilities, and also probably because of the simple nature of the procedure which made them feel they were fit enough or can manage to continue with the day's activities. The use of antibiotics after forceps tooth extraction is not routine in clinical dental practice.¹⁵ Consequently, antibiotics were not prescribed for all the patients in the present study. Antibiotics were prescribed for some patients in both cohorts because of their relatively poor oral hygiene status which will minimize post-operative morbidity and prevent clinical infection.

As evaluation of satisfaction towards treatment done was one of the outcome measures, no information was provided regarding the reasons for extraction of the teeth and the status of teeth going for extraction. It implied that no measures to

attain a substantial degree of standardization were observed in the recruitment of patients based on the condition of tooth. This may have an influence on the perceived satisfaction for treatment. However, clinical factors such as persistence of pain around the extraction socket, painful mastication, swelling, bleeding and hypersensitivity around the extraction sockets were the criteria used in the present study to assess satisfaction of patients to treatment and care received which provided substantial degree of standardization in this regard countering the adverse consequences, if any, of the tooth factor. Also, the data used for analysis was based on self-reports which are sometimes vulnerable to inaccurate responses due to social desirability, a respondent-related source of error or bias in this type of study. To obviate this concern, some researchers have suggested alternative ways to collect information such as direct observation or having other persons report information about respondents.²⁶⁻²⁸ However, as self-reports remain an economical means to gather information, research on social desirability centers on how best to reduce this bias.^{26, 29} This can be minimized by careful wording of questions and assurance of respondents of anonymity, measuring for social desirability bias and statistically controlling its influence; in addition, it is imperative that interviewers and survey instruments work to be neutral without attempting to influence respondents' answers.²⁶⁻²⁹ In the present study, the social desirability bias was reduced by ensuring that the instrument used to collect data was carefully worded without ambiguity and patients assured of their anonymity.

Conclusion

The outcome of this study suggests that in the presence or absence of accompanying persons, patients who have undergone forceps dental extractions and were given post-operative instructions in verbal and written forms will adhere and comply with the instructions resulting in satisfaction with treatment and care provided.

REFERENCES

1. Kim Y, Kim S, Myoung H. Independent predictors of satisfaction in impacted third molar surgery patients. *Community Dent Oral Epidemiol* 2010; 38: 274–286.
2. Gheisari R, Resalati F, Mahmoudi S, Golkari A, Mosaddad SA. Do different modes of delivering postoperative instructions to patients help reduce the side effects of tooth extraction? A randomized clinical trial. *J Oral Maxillofac Surg* 2018; 76: 1652.e1-7.
3. Blinder D, Rotenberg L, Peleg M, Taicher S. Patient compliance to instructions after oral surgical procedures. *Int J Oral Maxillofac Surg* 2001; 30: 216-219.
4. Ogunlewe MO, Adeyemo WL, Ladeinde AL, Taiwo OA. Incidence and pattern of presentation of dry socket following non-surgical tooth extraction. *Niger Quart J Hosp Med* 2007; 17: 126–130.
5. Kadir K, Ooi ZE, Loh EH. Patients' compliance to instructions after oral surgical procedures. *Int J Dent Oral Health* 2015; 1: 47-56.
6. Oginni FO. Dry Socket: A prospective study of prevalent risk factors in a Nigerian population. *J Oral Maxillofac Surg* 2008; 66: 2290–2299.
7. Alexander RE. Patients' understanding of postsurgical instruction forms. *Oral Surg Oral Med Oral Pathol Radiol Endod* 1999; 89: 153-158.
8. Sayah A, Janus C, Laskin DM. Patients' knowledge of oral and maxillofacial surgery terminology. *J Oral Maxillofac Surg* 2014; 72: 1040-2000.
9. Alvira-González J, Gay-Escoda C. Compliance of postoperative instructions following the surgical extraction of impacted lower third molar: A randomized clinical trial. *Med Oral Patol Oral Cir Bucal* 2015; 20: e224-e230.
10. Kessels RP. Patients' memory for medical information. *J R Soc Med* 2003; 96: 219-222.
11. [Carlisle A](#), [Jacobson KL](#), [Di Francesco L](#), [Parker RM](#). Practical strategies to improve communication with patients. *Pharm Therap* 2011; 36: 576–589.
12. Vallerand WP, Vallerand AH, Heft M. The effects of postoperative preparatory information on the clinical course following third molar extraction. *J Oral Maxillofac Surg* 1994; 52: 1165-1170.
13. [Zeng-Treitler Q](#), [Perri S](#), [Nakamura C](#), [Kuang J](#), [Hill B](#), [Bui DD](#), [Stoddard GJ](#), [Bray BE](#). Evaluation of a pictograph enhancement system for patient instruction: a recall study. *J Am Med Inform Assoc* 2014; 21:1026-1031.
14. Anyanechi CE, Saheeb BD. Reasons underlying failure to seek early dental treatment among patients presenting in a Nigeria Tertiary Hospital. *J Med Biomed Res* 2013; 12: 37-45.
15. Anyanechi C, Chukwunke F. Survey of the reasons for dental extraction in Eastern Nigeria. *Ann Med Health Sci Res* 2012; 2: 129-133.
16. Brasileiro BF, de Braganca RM, Van Sickels JE. An evaluation of patients' knowledge about perioperative information for third molar removal. *J Oral Maxillofac Surg* 2012; 70: 12–18.

17. Hermes D, Matthes M, Saka B. Treatment anxiety in oral and maxillofacial surgery: Results of a German multi-centre trial. *J Craniomaxillofac Surg* 2007; 35: 316-321.
18. Garip H, Abali O, Goker K, Gokturk U, Garip Y. Anxiety and extraction of third molars in Turkish patients. *Br J Oral Maxillofac Surg* 2004; 42: 551-554.
19. Atchison KA, Black EE, Leathers R, Belin TR, Abrego M, Gironda MW. A qualitative report of patient problems and postoperative instructions. *J Oral Maxillofac Surg* 2005; 63: 449-456.
20. [Sittitavornwong S](#), [Waite PD](#), [Holmes JD](#), [Klapow JC](#). The necessity of routine clinic follow-up visits after third molar removal. *J Oral Maxillofac Surg* 2005; 63:1278-1282.
21. Akpata O, Omoregie OF, Owotade F. Alveolar Osteitis: Patients' compliance to post-extraction instructions following extraction of molar teeth. *Niger Med J* 2013; 54: 335-338.
22. Weiner MF, Lovitt R. An examination of patients' understanding of information from health care providers. *Hosp Community Psychiatry* 1984; 35: 619-620.
23. Baker GC, Newton DE, Bergstresser PR. Increased readability improves the comprehension of written information for patients with skin disease. *J Am Acad Dermatol* 1988; 19: 1135-1141.
24. Adebayo ET, Dairo M. Patients' compliance with instructions after oral surgery in Nigeria. *J. Community Med Primary Health Care* 2005; 17: 38-44.
25. Schouten BC, Eijkman MA, Hoogstraten J. Dentists' and patients' communicative behaviour and their satisfaction with the dental encounter. *Community Dent Health* 2003; 20:11-55.
26. Randall DM, Fernandes MF. The social desirability response bias in ethics research. In Michalos AC, Poff DC, (Eds.), *Advances in business ethics research. Citation classics from the Journal of Business Ethics: Celebrating the first thirty years of publication*, 2013, pp 173-190.
27. Jia HE, van de Vijver FJ, Espinosa AD, Abubakar A, Dimitrova R, Adams BG, Jochen REB, Samantha SIM. Socially desirable responding: Enhancement and denial in 20 countries. *Cross-Cultural Res* 2015; 49: 227-249.
28. Norwood FB, Lusk JL. Social desirability bias in real, hypothetical, and inferred valuation experiments. *Am J Agr Econ* 2011; 93: 528-534.
29. Holtgraves T. Social desirability and self-reports: Testing models of socially desirable responding. *Personality Soc Psychol Bulletin* 2004; 30: 161-172.