

## Analysis of the Variables Which Influence the Dental Patients' Satisfaction

Jon Salazar Cantero<sup>1</sup>, Mario Utrilla Trinidad<sup>2\*</sup>, Helga Mediavilla Ibañez<sup>3</sup> and Juan Carlos Prados<sup>4</sup>

<sup>1</sup>Degree in Dentistry Universidad del País Vasco. Master in Management and Direction of Dental Clinics Universidad Rey Juan Carlos

<sup>2</sup>Doctor in Dentistry, MBA in Healthcare Management, Director of the Master in Management and Direction of Dental Clinics of Psico Dental

<sup>3</sup>Dental Consultant and Clinical Psychologist specialized in dental phobia, Individual and Corporate Dental Coaching Certified by AECOP-EMCC-ISCP-EFPA, Founder and Director of Psico Dental

<sup>4</sup>Universidad Rey Juan Carlos

**\*Corresponding Author:** Mario Utrilla Trinidad, Doctor in Dentistry, MBA in Healthcare Management, Director of the Master in Management and Direction of Dental Clinics of Psico Dent.

**Received:** January 21, 2016; **Published:** March 14, 2016

### Abstract

**Purpose:** This study aims to analyze the factors influencing the dental patients' satisfaction.

**Methods:** A questionnaire based on the SERVPERF template was applied. The sample consisted on 245 patients of five Spanish private dental clinics.

**Results:** The vast majority of patients (98%) stated that they were satisfied and they would recommend their clinic (99%). Satisfaction levels were highest among those who were older. The treatment type also influenced the perceived satisfaction; on the contrary, gender, the level of education and the degree of comfort before and during the treatment did not.

**Conclusion:** The issues related to time management-especially the waiting time-were the worst valued. Besides, it came apparent that reliance and empathy, in case of being negatively rated, influence increasing the degree of dissatisfaction.

**Keywords:** Satisfaction; Patients' Satisfaction; Dental Care; Quality Dental Service; Servperf

### Background

In recent years, there is a special concern in improving Odontological services. The growth in competitiveness through a rising in the offer has caused that dental clinics are increasingly worried for their clients' satisfaction due to their services.

It has to be taken into account that the elements that a professional considers as important in order to define a treatment as successful do not have to correspond to the patients' perception. In this context it gains a special importance to know which variables increase and decrease the patients' satisfaction.

Furthermore, the current literature does not obtains a consensus regarding which instrument should be used to measure these variables in the satisfaction, in such a way, some non-validated questionnaires for these measuring types could even be found, what makes it difficult to compare data.

The purpose of this paper is to analyse the variables which influence the dental patients' perceived satisfaction, to the ultimate goal of emphasizing them so as to provide the attention in the highest possible quality.

---

**Citation:** Jon Salazar, Mario Utrilla Trinidad., *et al.* "Analysis of the Variables Which Influence the Dental Patients' Satisfaction". *EC Dental Science* 4.1 (2016): 697-706.

## Materials and Methods

### Research type

The coming survey was a descriptive observational study and, taking into consideration the time sequence, it was transversal.

### Study population, sample size and selection

The study population consisted of all the patients of five Spanish private dental clinics--located in Madrid, Barcelona, Oviedo, Santander and Reinoso--who attended those consultations mentioned from April the 8<sup>th</sup> and May the 6<sup>th</sup>, 2015.

The questionnaires completed by the patients were 258, 13 of them had to be dismissed by the lack of data. The sample size consists therefore of 245 patients.

All the individuals who were included in the research should fulfill the following inclusion criteria: access the study voluntarily, be over 18 years of age and having responded at least twice before had to the consultation.

### Data collection instrument

Based on the different templates for the collection of encountered in the literature data, it was determined that for the implementation of this research, the SERVPERF template was the most appropriate one. This standard was accomplished by Cronin and Taylor (1992, 1994) in response to the doubts and questionings emerging from the SERVQUAL template--whose authors were Parasuraman, Zeithaml and Berry--which analysed the quality of a service taking into account the expectations which were generated by this one and the satisfaction referred by the user.

The SERVPERF template eliminates the expectations measurement considering them to distort the results and it is entirely based on the users' perception in the face of 22 items divided into five criteria: tangible elements, reliability, responsiveness, security and empathy.

This questionnaire has got three distinct parts.

The first part gathers the users' data concerning gender, age, level of education (None, Primary, Secondary and Higher education) and treatment types which have been conducted at the consultation (dental implants, endodontics, orthodontics, dental fillings, removable prosthesis and others).

In the second part 22 items of the SERVPERF template must be answered by the patients, granting a rating from 1 to 7, being 1 strongly disagree and 7 strongly agree. Each one of these items belongs to one out of the five dimensions (Table 1).

Dimensions	Items
Tangibility	1 to 4
Reliability	5 to 9
Responsiveness	10 to 13
Security	14 to 17
Empathy	18 to 22

**Table 1:** This dental clinic owns modern appearance equipment.

**Tangibility:** The appearance of the facilities and the communication material as well as the appearance of the personnel.

**Reliability:** Ability to reliably and precisely conduct the service.

**Responsiveness:** Willingness to help the clients and provide immediate service.

**Security:** Employees' knowledge and ability to inspire confidence.

**Empathy:** Cautious and personalized attention which is offered to the patients by the dental clinic.

In the third part, the patients are asked about their satisfaction and fear of the dental treatment and asked to refer the clinic to third parties being the same scale as in the second part utilized.

Optimum values were considered satisfactory within the range 5, 6 and 7. Whereas the values ranging from 1 to 4 were registered as dissatisfaction critical values.

**Data collection technique**

The questionnaires were presented by the reception personnel in order to be filled out at the waiting room and be deposited into a ballot box before going to a face-to-face consultation.

For the purpose of giving a wide berth to bias in the questions related to the waiting time, the questionnaires were presented before going into the waiting room or without having spent more than five minutes inside de place.

On March the 30<sup>th</sup>, 2015, a pilot test was conducted in one of the dental clinics, in which no mistakes in the data collection technique were detected.

**Data processing**

A computer with Windows 7 and Microsoft Word 2010 and Microsoft Excel 2010 software was operated for processing of data of the SERVPERF template.

**Results**

Women account for 61 per cent of the total and men account for 39 per cent. The breakdown by age (Table 2) was as follows: 11% between 18 and 27 years of age, 18% between 28 and 37 and 2% from 78 years of age or more the age average was 46 years old. Regarding the researches (Table 3), the 1% declared not having a degree or studies and the 16% Primary, 39% Secondary and 44% higher studies.

Age Range	Percentage
18-27	11%
28-37	18%
38-47	27%
48-57	20%
58-67	17%
68-77	5%
>78	2%

*Table 2: The physical facilities (waiting room, reception hall, cabinets) are engaging.*

Level of Education	Percentage
None	1%
Primary	16%
Secondary	39%
Higher	44%

*Table 3: The professionals have got a clean and neat appearance.*

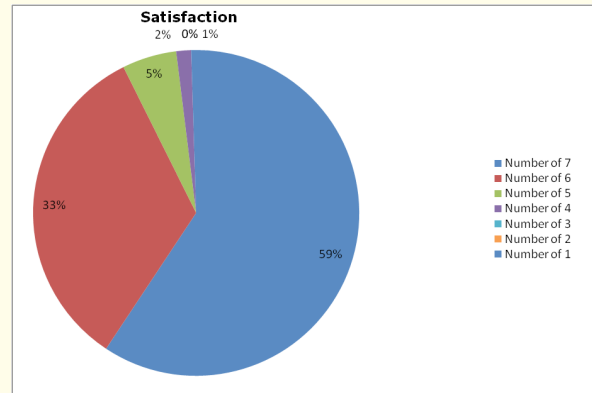


Figure 1

In connection with the 23<sup>rd</sup> query out of the questionnaire which was directly asked about the satisfaction (Figure 1), it could be observed that the 98 per cent were located inside the values 5, 6 and 7 distributed as it follows: value 7 with 58%, value 6 with 35%, value 5 with 5% and the value 4 obtained 2%. The values of the recommendation in the 24<sup>th</sup> enquiry were divided in the following way: value 7 with 69%, value 6 with 24%, value 5 with 6% and value 4 with 1%.

In respect of the 25<sup>th</sup> query about the tranquillity mood, the 35% marked 7, being the value which indicates a significant tranquillity. The rest of results were as follows: value 6 with 22%, 5 with 13%, 4 with 10%, 3 with 6%, 2 with 5% and 1 with 9%.

Concentrating now on the SERVPERF questionnaire, 7 was the accomplished trend by the 22 items, whereas question number 5 "the appointments begin at the designated hour" was within a close reach of obtaining a 6 trend (Figure 2). Regarding the median, all the queries were presented between the 6.78 out of the 18<sup>th</sup> question "Competent professionals call them by their name" and the 5.81 out of the 5<sup>th</sup> query.

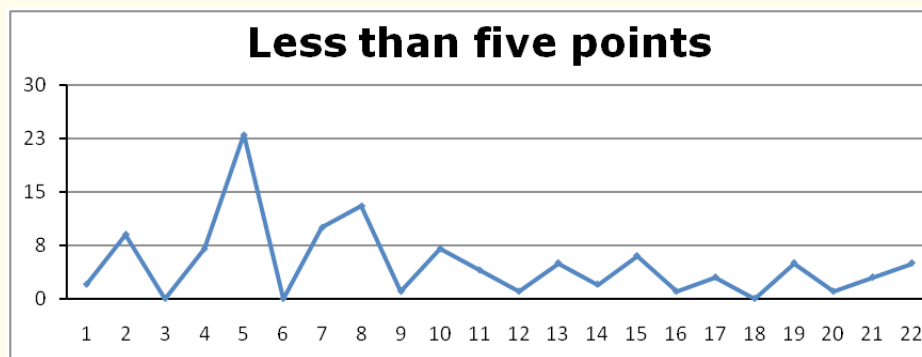


Figure 2

Taking into account the values from 1 to 4 in the scale as critical values, it is possible to declare that question 5 was regarded inside this range by 26 persons (Figure 3), the 11% of the total. Followed at some distance by question 8 "Treatments are finalized in the time allocated" by 15 people, question 2 "The physical facilities are engaging" by 13, question 7 "Treatments are well accomplished the first time" by 11, question 10 "The dental clinic clarifies when the treatments will conclude" by 9 and the questions 4 "The material components are appealing" and 19 "The dental clinic has got a timetable adapted to your requirements" by 8 people each one.

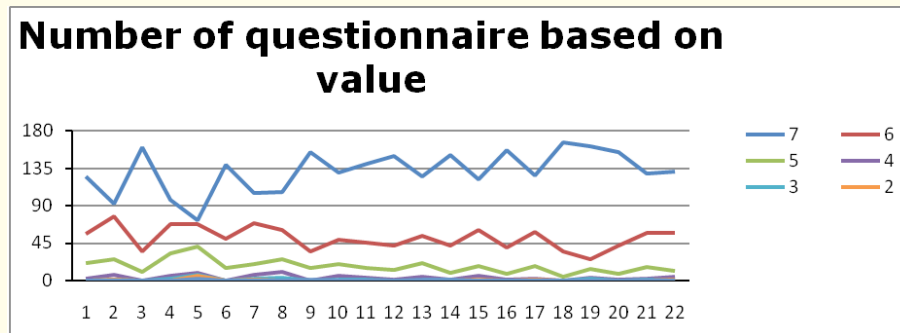


Figure 3

In respect of the gender results, over 0.21 points differences were not appraised, being 0.08 point the total average of the difference between men and women.

Dividing the patients as the treatment may be (Figure 4) it could be seen that the highest average is 6.58 for dental implants and removable prosthesis and the lowest one for orthodontics with 6.24. Analyzing all the items it could be seen that the highest variation is in question 5 with a difference of 0.68 points between removable prosthesis and orthodontics.

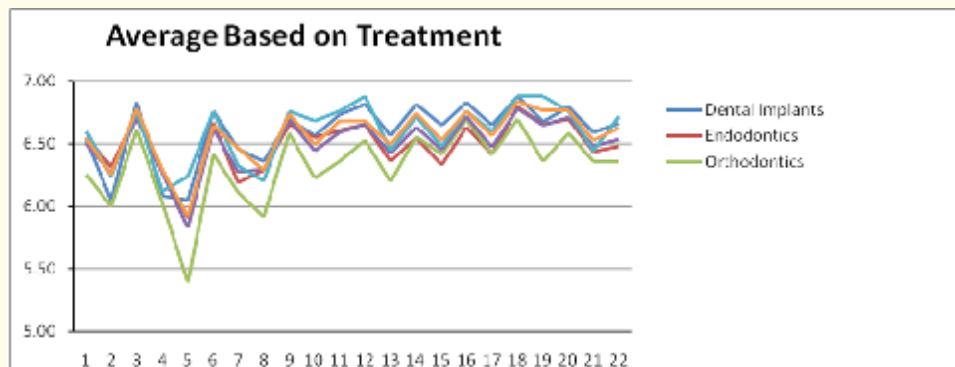


Figure 4

In relation to age, there was a tendency to improve the average of the questionnaire as it was increasing, being 6.24 points the range between 18 and 27, and 6.71 points in the 68 years of age or older range.

Examining the studies level results, it could be seen that there is a light descend in the satisfaction as the knowledge level increases. Ranging the average of the questionnaire from 6.60 in Primary up to 6.48 in higher.

By splitting the results obtained with the questionnaire by the satisfaction which each one marked in the 23<sup>rd</sup> question (Table 4), it was witnessed that there existed a direct correlation between the answer to this question and the average of the questionnaire. Those who registered their satisfaction with 7 had a ratio of 6.82, whereas those who indicated 4 had a ratio of 5.04.

Satisfaction value	SERVPERF average
7	6,82
6	6,14
5	5,45
4	5,07

Table 4: The material elements related to the service (folders, magazines, cards) are engaging.

Evaluating those who declared themselves dissatisfied with the 23<sup>rd</sup> question (Figure 5), the 2%-that is to say that had punctuated with 4 or less-could be seen that the worst values appeared in questions 14 "The professionals' behavior conveys reliance", 15 "Patients feel safe in the clinic", 17 "The professionals have got knowledge enough to clear any doubt you may have up" and 22 "The professionals understand what you need".

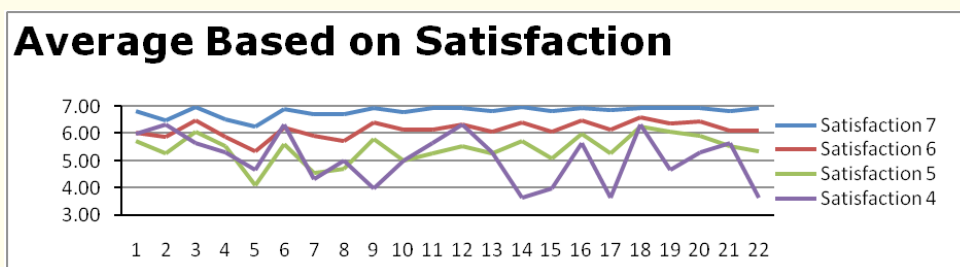


Figure 5

Appraising the questionnaire ratios on the basis of the recommendation (Figure 10), it could be seen that the larger value in the 24<sup>th</sup> question about the recommendation, the larger average value in the questionnaire. Thus, with a recommendation of 7, the median was 6.76, whereas with a recommendation of 4, the median was 4.98.

Recommendation value	Servperf Average
7	6,76
6	6,07
5	5,33
4	4,98

Table 5: The appointments begin at the designated hour.

Regarding the tranquillity (Table 6), the most peaceful had a better result in the questionnaire with 6.68. Conversely, those who value their tranquillity in the 25<sup>th</sup> query with 6 had the lowest average with 6.29.

Discussion

Nowadays, unanimity cannot be appreciated in the literature in the used questionnaire type to measure the satisfaction in the area of odontology. Thus there can be seen studies in the same way as the one published by Araya Vallespir which applies the SERVPERF method as the current study. In Rodriguez Varas' doctoral thesis and in Dierssen T's article it is utilized the SERVQHOS variant. However, other institutions created specific questionnaires for their patients' satisfaction study as in the case of the University of Kaunas, the Canterbury Hospital or the University of Barcelona. Other cases used instruments endorsed by other agencies, as in the case of Lopez-Soto.

All those differences regarding the satisfaction method and the measurement instrument makes it more complex to compare results between some odontology services and others.

Tranquilityvalue	SERVPERF average
7	6,68
6	6,29
5	6,36
4	6,51
3	6,57
2	6,46
1	6,41

Table 6

An important aspect to consider is the sample type which the studies analyze. In contrast to the current survey where the sample was created by the private network users, most of the revised articles examined the satisfaction in public institutions. This circumstance probably on account of the further easiness to perform studies in the public sector prevents, on the other hand, the opportunity to have a real vision of the satisfaction which the whole society possesses about odontology. That part of society mainly attends the private sector where, furthermore, exists a larger treatments portfolio most of which are rarely performed in the odontology public network. The percentage of users satisfied with their dental care was 98%. This positive information could be encountered in other articles. Moreover, this fact of the 23<sup>rd</sup> question is directly related to the average of the SERVPERF questionnaire which was larger than 6.21 in all the questions except for question 5.

The consultation recommendation was also very high, 99%, being the 69% those who would recommend it in any case. In the results, besides, it could be seen a direct relation in which the bigger the average is the bigger the recommendation is.

The question which more times were punctuated with 4 or less was question number 5, "The appointments begin at the designated hour", followed by the 8<sup>th</sup>, "Treatments are finalized at the designated time". These results are encountered in other studies too. In addition, the 5<sup>th</sup> question has got the lower number of seven, only up to 82 of the 245 questionnaires, and the worst average rating, 5.81. Everything demonstrates that the patients are not satisfied with how their time is treated. Nevertheless, although this item is the worst rated by the majority, it does not seem to have a remarkable influence in the ultimate satisfaction.

It has to be taken into account that there is not a huge variation in most of the issues and as evidence by the studies, any fluctuation must be considered as a relevant change, in as much as patients tend to be aware of this type of studies.

Regarding the patients who declared themselves in the 23<sup>rd</sup> question, as it was described in the results, they have much lower values in the issues related to the confidence transmitted by the dentist, 14, 15 and 17. In such a way they have figures which are nether than the rest in the 22<sup>nd</sup> question about the dental team's empathy. Nevertheless, though this could demonstrate that the questions concerning security and empathy are those which affect satisfaction the most, bigger samples must be counted on to corroborate those data.

The data on the influence of tranquility to the treatment concerning satisfaction are not definite enough in this study. In contrast, it has been detected a relation between fear and anxiety at the dental consultation with higher dissatisfaction rates in Lopez-Soto's study.

Regarding the satisfaction and age relation, as in this study, García C could notice a larger dissatisfaction in young patients than in adults. Moreover, as much García as Dierseent associated the high level of education with dissatisfaction, situation which-even though

it could not be verified in this study-it has been seen a tendency in the same significance which should be valued in future studies with an increase in the sample.

### Conclusions

The vast majority of patients (98%) are satisfied with their dental care service. Almost the completeness (99%) of the patients would recommend their dental clinic and the degree of recommendation is directly related to the degree of satisfaction.

The satisfaction declared in the 23<sup>rd</sup> question is directly related to the satisfaction value obtained throughout the 22 items of the SERVPERF questionnaire.

The gender and the level of education barely have impact on satisfaction. The age is an influencing element on satisfaction being this last one larger as the age increases. The treatment type has got an effect on the perceived satisfaction, being the patients with dental implants and removable prostheses those most satisfied and the patients with orthodontics the least.

The reliability sections 5, 7 and 8, and tangibility 2 and 4, are the worst valued. The patients who worse rate the confidence and empathy are those who declare themselves more dissatisfied. The patients' tranquillity and fear are not linked to satisfaction.

### Recommendations

It is necessary to improve all the aspects related to the patients' time usage, specially the difference between the hour of the scheduled appointment and the real time in which the dentists see the patients.

The physical aspects of the clinic and the materials such as letters and magazines must be improved too due to the negative assessment they have gained.

It would be convenient to conduct new studies, with larger samples which allow obtaining more representative data about the education level, treatment type and age. These studies will have to analyze the possible relation between low values in security and a high level of dissatisfaction, for what it is necessary again the usage of larger samples.

### Appendices

In this appendix the complete SERVPERF questionnaire which was delivered to the patients is published.

#### User Data

Gender M      F      

Indicate those treatments conducted in this Age \_\_\_\_ dental clinic.

Level of education		Implants	<input type="checkbox"/>
None	<input type="checkbox"/>	Endodontics	<input type="checkbox"/>
Primary	<input type="checkbox"/>	Orthodontics	<input type="checkbox"/>
Secondary	<input type="checkbox"/>	Filling	<input type="checkbox"/>
Higher	<input type="checkbox"/>	Removable Prosthesis	<input type="checkbox"/>
		Others	<input type="checkbox"/>

The coming questionnaire includes 22 statements which you will punctuate between 1 and 7, being 1 strongly disagree and 7 strongly agree.



1. This dental clinic owns modern appearance equipment.
2. The physical facilities (waiting room, reception hall, cabinets) are engaging.
3. The professionals have got a clean and neat appearance.
4. The material elements related to the service (folders, magazines, cards) are engaging.
5. The appointments begin at the designated hour.
6. When the patient has got a problem, the dental clinic shows a sincere interest to solve it.
7. Treatments are well accomplished the first time.
8. Treatments are finalized in the time allocated.
9. Your personal data are updated and with no mistakes.
10. The dental clinic clarifies when the treatments will conclude.
11. You are treated quickly and effectively by the professionals.
12. The professionals are willing to help the clients and provide immediate service.
13. The professionals are never too busy to answer any question.
14. The professionals' behavior convey reliability.
15. Patients feel safe in the clinic.
16. The professionals are always nice and kind.
17. The professionals have got knowledge enough to clear any doubt you may have up
18. The professionals cheer you and call you by your proper name.
19. The clinic has got a timetable adapted to your necessities.
20. The professionals pay personalized attention to each patient.
21. The professionals care about your interests.
22. The professionals understand what you need

### Bibliography

1. Cronin J and Taylor S. "SERVPERF versus SERVQUAL: Reconciling performance-based and perceptions-minus-expectations measurement of service quality". *Journal of Marketing* 58.1 (1994): 125-131.
2. Parasuraman A, et al. "SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality". *Journal of Retailing* 64.1 (1988): 12-40.
3. Martha CecilisRodriguez Vargas. "Factores que influyen en la percepción de la calidad de los usuarios externos de la Clínica de la Facultad de Odontología de la Universidad Nacional Mayor de San Marcos". [Tesis doctoral]. Lima: Facultad de Odontología, Universidad Mayor de San Marcos (2012).
4. Carlas F. Araya Vallespir. "Calidad percibida en la atención odontológica a una población urbana usuaria de un centro de salud familiar [Tesis Doctoral]". *Cordoba: Facultad de Odontología, Universidad Nacional de Cordoba* (2011).
5. Lopez-Soto OP. "Variables relacionadas con la satisfacción del paciente de los servicios odontológicos". *Revista Gerencia y Políticas de Salud* 9.18 (2010): 124-136.
6. Bedi R., et al. "A study of satisfaction with dental services among adults in the United Kindom". *British dental journal* 198.7 (2005): 433-437.
7. Betin. "A Satisfaccion de los. Pacientes respecto a la calidad de la atención odontológica en una Institución pública universitaria de la ciudad de Cartagena". *Rev Duazary* 6.2 (2009): 95-101.
8. O'Shea R., et al. "Why patients change dentists: practitioner's views". *The Journal of the American Dental Association* 112.6 (1986): 851-914.
9. Flora E. "Satisfaccion de los usuarios con los servicios de estomatología en el IMSS". *Revista Médica del Instituto Mexicano del Seguro Social* 45.2 (2007): 149-155.

10. Esa R and Rajah P. "Satisfaction with the oral health services. A qualitative study among Non- Commissioned officers in the Malaysian Armed Forces". *Community Dental Health* 23.1 (2006): 15-20.
11. Gonzales H. "Nivel de satisfacción de los pacientes atendidos en la Clínica Odontológica de la UNMSM". [Tesis Doctoral] (2005).
12. Hincapié A. "Satisfacción de los usuarios frente a la calidad de la atención en el programa de Odontología Integral del Adolescente y Ortodoncia de la Facultad de Odontología de la Universidad de Antioquía". *Revista Facultad de Odontología Universidad de Antioquia* 15.2 (2004): 5-11.
13. Fox JG and Storms DM. "A different approach to sociodemographic predictors of satisfaction with health care". *Social Science & Medicine* 15.5 (1981): 557-564.
14. Williams B. "Patient satisfaction: a valid concept?" *Social Science & Medicine* 38.4 (1994): 509-516.
15. Skalauskiene Z., et al. "Testing of the questionnaire on dental care satisfaction in a sample of adult patients visiting dental clinics at faculty of Odontology, Kaunas University of medicine. A pilot study". *Stomatologija* 7.3 (2005): 84- 89.
16. Williams SJ., et al. "Convergence and divergence: assessing criteria of customer's satisfaction across general practice, dental and hospital care settings". *Social Science & Medicine* 33.6 (1991): 707-716.
17. Lopez J., et al. "Encuesta de satisfacción a los pacientes que acuden al servicio de primeras visitas y de Integrada de Adultos de la Clínica odontológica Universitaria de la Facultad de odontología de la Universidad de Barcelona". *Av Odontostomatol* 18.3 (2002): 143-151.
18. Elizondo J., et al. "La satisfacción del paciente con la atención técnica del servicio odontológico". *Revista Salud Publica y Nutrición* 12.1 (2011).
19. Antonio Jose Lopez Garvi. "Estudio de la satisfacción del paciente en odontología mediante cuestionarios de salud: adaptación al español del cuestionario "dental satisfaction questionnaire" [Ciències Mèdiques] (2012).
20. García C., et al. "usuario con los servicios odontológicos de atención primaria recibida y factores sociodemográficos asociados". *MPA e -Journal de Med. Journal of Family Medicine and Primary Care* 4.1 (2010): 7-13.
21. Dierssen and y otros. "Factores que determinan la alta satisfacción del usuario con la asistencia hospitalaria". *Anales del Sistema Sanitario de Navarra* 32.3 (2009): 317-325.

**Volume 4 Issue 1 March 2016**

**© All rights reserved by Jon Salazar, Mario Utrilla Trinidad., et al.**