



*International Journal Of*  
**Recent Scientific  
Research**

ISSN: 0976-3031  
Volume: 7(3) March -2016

EPIDEMICAL SURVEY ON CARIES USING DMF CARRIED OUT AMONG THE  
CHILDREN'S WITH FIVE YEARS OLD

Taylane Soffener Berlanga De Araújo., Idiberto José  
Zotarelli Filho., Elias Naim Kassis ., Karina Mendes De  
Souza<sup>1</sup> and Leticia Canile Dos Santos



THE OFFICIAL PUBLICATION OF  
INTERNATIONAL JOURNAL OF RECENT SCIENTIFIC RESEARCH (IJRSR)  
<http://www.recentscientific.com/> [recentscientific@gmail.com](mailto:recentscientific@gmail.com)



## CASE STUDY

### EPIDEMICAL SURVEY ON CARIES USING DMF CARRIED OUT AMONG THE CHILDREN'S WITH FIVE YEARS OLD

**Taylane Soffener Berlanga De Araújo<sup>1,2</sup>, Idiberto José Zotarelli Filho<sup>2</sup>, Elias Naim Kassis<sup>1,2</sup>, Karina Mendes De Souza<sup>1</sup> and Letícia Canile Dos Santos<sup>1</sup>**

<sup>1</sup>University Center North Paulista (Unorp) - São José do Rio Preto – SP, Brazil

<sup>2</sup>Continuing Education (Unipos), Street Ipiranga, 3460, São José do Rio Preto SP, Brazil 15020-040

#### ARTICLE INFO

##### Article History:

Received 16<sup>th</sup> December, 2015

Received in revised form 24<sup>th</sup>

January, 2016

Accepted 23<sup>rd</sup> February, 2016

Published online 28<sup>th</sup>

March, 2016

##### Keywords:

Oral Health; Epidemiology; Dental Caries/ Epidemiology.

#### ABSTRACT

This epidemiological cross-sectional study of the oral health status of the child population of both genders enrolled in Municipal Schools Early Childhood Education; José Aidar, Neil Calil, September 7, located in New Granada in the State of São Paulo. It was intended to assess the oral health, measuring the condition of the affected or not dental caries structures arising directly or indirectly from the condition of hygiene, diet, quantity and quality of health care and services provided to the population. This study followed the methodology recommended by the World Health Organization (WHO) to conduct epidemiological studies, using the DMFT index. The form used is a simplified form to the LEC (Epidemiological Survey of Caries). One may observe that the children of this community are at risk of tooth decay due to the frequency of cariogenic food, a lack of education about oral hygiene and poor access to care provided by the health service in the region. According to the results as a basis to guide planning and demand preventive and curative oral health services, should be encouraged to care and health care of this population.

**Copyright © Taylane Soffener Berlanga De Araújo et al., 2016**, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

#### INTRODUCTION

Epidemiological surveys are of great importance in the field of public health and provide essential elements for monitoring health conditions and system performance that is being applied. Epidemiological surveys in oral health in Brazil occurred in 1986, 1996 and 2003 and 2010 were carried out by the Ministry of Health (MOH), through the Department of Primary Care (DAB), the National Coordination of Oral Health Surveillance Secretariat of Health (SVS) linked to it [9, 19; 20, 24; 32].

The SBBrasil 2003 outlined a major diagnosis of oral health profile of Brazilians this was the basis for the implementation of the key strategies proposed in Smiling Brazil. In this survey we were evaluated 108,921 Brazilians and 49,049 men (45.03%) and 59,872 women (54.97 %). Already SBBrasil 2010 was the first survey after the start of the smiling Brazil in 2004. In this research, the sample was composed of 177 municipalities, 26 state capitals, the Federal District and 150 municipalities of different population ratios. Altogether 37,519 people were examined of 5, 12, 15 to 19 years, 34-45 and 65-74 years. The indices used were those recommended by the

World Health Organization (WHO), DMFT (permanent teeth) and dmft (deciduous teeth) [5].

When making a comparison between the data collected in SBBrasil 2003 and SBBrasil 2010 it may be noted that after the smiling Brazil deploying the DMFT / DMFT = 0 in the prevalence of caries decreased for almost all ages. Caries free was represented in proportion, in 2003 and 2010, respectively, 40.63% and 46.6% - to 5 years; 31.08 % and 43.5 % - to 12 years; 11.06 % and 23.09 % - from 15 to 19 years; 0.52 % and 0.9 % - 35-44 years; 0.52 % and 0.2 % - 65-74 years old [20]. The percentage of DMFT / c-d = 0 are always lower in the North and Northeast compared to the South and Southeast. Brazil. Ministry of Health. Department of Health Care. Department of Primary Care.

Epidemiological research schools are made at the national level, showing an overall condition of the problem. Already local surveys are important to express the reality of each region or municipality, so that the appropriate measures for improving the oral situation of children are taken. For this matter, this study aims to determine the oral health status of the students of the Municipal Children's Education Schools in New Granada, São Paulo, since it had not yet been implemented and there are

\*Corresponding author: **Taylane Soffener Berlanga De Araújo**

University Center North Paulista (Unorp) - São José do Rio Preto – SP, Brazil

no effective preventive measures these institutions. This study aimed to plan for management and evaluation of policies to improve the oral health of school children.

### **Study Design**

This is an exploratory, observational and cross-sectional study [1], which were performed oral examinations to assess the prevalence and severity of dental caries and periodontal diseases, as well as factors related to socioeconomic status, access to dental services and health perception. We used the methodology recommended by WHO, studying with natural light and a spatula disposable timber, commonly used to diagnose oropharyngeal. We did not perform the examination with the explorer, as this survey is not reliable to diagnose lesions of occlusal surfaces of enamel. Not using the conventional probe further prevents the transfer of microorganisms from one surface to the other, as well as the possibility of damaging the integrity of the demineralized enamel surface, thereby favoring the appearance of lesions.

### **Calibration**

Only one examiner performs the clinical examination for carrying out an epidemiological survey. That way we avoid the problems of calibration between different examiners, safeguarding the integrity of the examinations. When an epidemiological survey is carried out by a team, it is necessary that the examiners are trained to provide consistency in clinical trials. This is called calibration. The objectives of the calibration is to ensure uniformity of interpretation, understanding and application of the criteria for various diseases and conditions to be observed and recorded. Ensure that each professional can examine uniformly standardized way and minimize variations between different examiners.

### **Characterization of the Study Area**

This activity was developed in Nova Granada, Brazil. The government is represented by UBS (Basic Health Unit), PSF (Family Health Program), Santa Casa, Desk Emergency Department, state and municipal schools, Municipal Preschools, Forum, Mail, Police, Ciretran. The Preschools Neil Calil, José Aidar, September 7, have the purpose of giving basic education, according to the educational legislation, providing the full development of the student, his preparation for the exercise of citizenship and his qualification for work. The course of early childhood education, the first stage of basic education aims at the integral development of children up to six years old, in their physical, psychological, intellectual and social aspects, complementing the family and community action. They are offered by schools, classes in the morning and classes in the afternoon.

### **Universe and Sample**

The research sample consisted of 80 children of both genders, enrolled in Child Education Municipal Schools; José Aidar, Neil Calil, September 7 in New Granada, upon authorization by letter of consent signed by the coordinator of the institution, as

well as parental consent by signing the Instrument of Consent. The 80 children are aged 5 years; in which 40 children studying in preschool José Aidar, 20 children studying in preschool Neil Calil, and 20 other students at preschool September 7. From what has been proposed in SB Brazil project, the age-rate recommended by the World Health Organisation (5 years) was chosen because of the interest in relation to levels of oral diseases in deciduous teeth, since they can show changes in a period shorter time than the permanent dentition in other age-index, and is used internationally to measure the caries attack in deciduous teeth.

### **Materials Used**

For data collection, the biosecurity apparatus was used, with cap, mask, apron, goggles and gloves, an examination record with indices of primary teeth and / or permanent, and treatments that fall into the following element, and disposable wooden spatulas.

### **Data Collect**

Data collection should be carried out in natural light using disposable wooden spatula, the data must be recorded on the card, which contains the child data, which will be attached to the Consent and Informed, signed by the responsible. Only one examiner performs the clinical examination for carrying out an epidemiological survey. That way we avoid the problems of calibration between different examiners, safeguarding the integrity of the examinations [8].

### **Notation Used**

To assess the dental condition, was chosen dmft due to its worldwide support, as is recommended by the World Health Organization (WHO) since its first edition in 1977. Several updates have been made over the years, in addition to diagnostic criteria have been incorporated into the treatment requirements. Thus, there was a higher qualification of the index, the ability to perform various combinations of diagnosis and treatment. The codes and criteria were the same as SB Brazil Project [20].

### **Data analysis**

The data collected will be entered and analyzed using SPSS for Windows, version 8.0. To make comparisons between students from public schools, will apply statistical tests chi-square, to measure the difference between proportions (tooth decay), and Mann-Whitney U test, to test the differences between the decay rates. The asymmetric distribution of Ceo-D indices justified the choice of non-parametric tests.

## **RESULTS**

80 children of New Granada kindergartens and 47 of these children had dental caries requiring dental treatment were examined, not preventive but curative form (figure 1). In these 80 children analyzed can determine the intra oral clinical examination that the situation of your teeth is very unfavorable

to health as a whole. In the review it is clear that the conditions presented denote precariousness in controlling the disease and lack of knowledge of parents and teachers of the importance of prevention methods, this fact can be seen in figure 2.

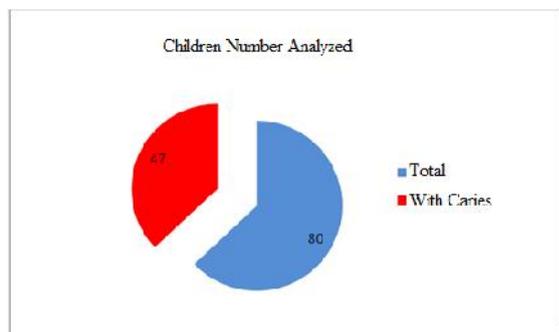


Figure 1 Number of children assessed and the number of children with carious teeth.

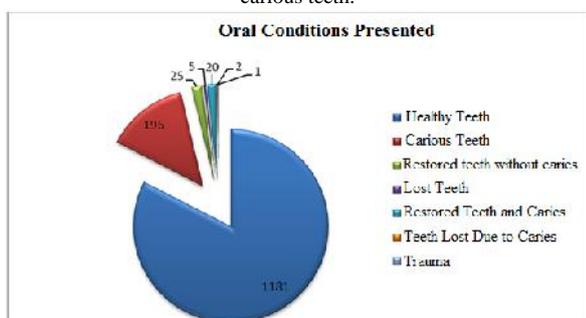


Figure 2 Oral findings in 80 children evaluated.

This epidemiological work demonstrates the importance of awareness and awareness of mothers about the risk of disease transmission decay to your son, for mothers who received guidelines on how to prevent this disease can teach and collect children healthier habits. And sure the school has a fundamental role in guiding these children to healthier habits and to be a disseminator of health concepts

The early acquisition of bacteria of children occurs mainly through maternal saliva, but probably also from other sources of infection [22]. There is high prevalence intrafamily transmission of cariogenic bacteria [28]. In a study by Kulkarni *et al.* [16] The analysis of the bacterial strains of different families of individuals has always heterogeneous, however, analysis among members of the same family, showed frequent infections by common lines. This was also confirmed by Hamada *et al.* [13].

Individual habits, family, as well as oral hygiene may regulate the establishment and development of cariogenic potential of the bacteria [21]. Thus, the identification of bacteria transmission sources is essential to the development of caries prevention strategies, as this Control can not affect the teeth, thus not establishing itself as tooth decay.

Among the findings to WHO indicates possible treatments for certain specific cases. The findings of this research should be treated beyond the caries teeth that have been affected by this disease, thus the figure 3 below provides the following forms of treatment of teeth affected by caries.

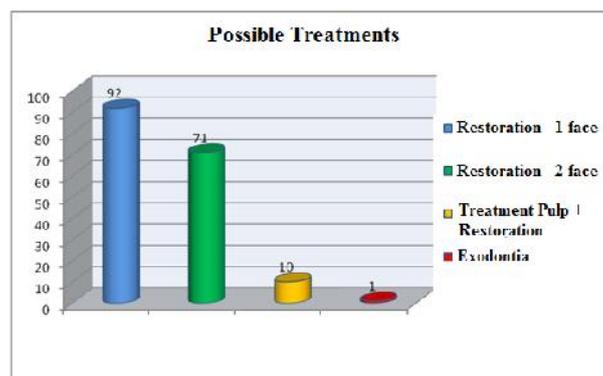


Figure 3 Possible treatments of teeth affected by caries.

## DISCUSSION

Much is said in oral health, minimally invasive dentistry, but still is places that apply to dentistry Age of Pain, where the treatment of caries is basically the extraction, or the Age Restorative where any decay signal if large preparations with much of tooth structure destruction.

This is very worrying because the dental caries is the main disease that affects the oral health of children, it is a progressive disease responsible for the destruction of enamel, dentin and cementum by acid, initiated by microbial activity on the tooth surface [1]. It comes from the epidemiological point of view, tooth decay is a major health problem worldwide, but its occurrence has been declining since the late 70 [26, 30]. This index is not very promising when it comes to primary elements [29].

The main measures taken to reduce caries include the addition of fluoride in public water supplies and toothpastes, and the reform of public health services [1-3, 30]. By analyzing the oral microbiota as a whole, can be said that is the most complex of our whole body, only bacteria there are over 30 different genres, covering more than 500 different species. In the mouth, there are about 350 bacterial species have grown and more than 200 have been recognized by genetic methods [31]. Thus associating risk factors such as poor diet, poor dental hygiene becomes undoubtedly a determining factor in the appearance of carious teeth [27].

Epidemiological research provides the planning of health services in a given area, and thus helps to identify, monitor and evaluate the distribution and trends in severity and prevalence of disease. Encouraging the development of good health programs and proper planning of the amount and type of professionals needed [2]. Healthy teeth and oral soft tissues improve the health status of any individual, a good dentition is essential to an acceptable facial profile especially when it comes from the act of speaking and smiling, feed. Therefore, you need professional assistance and health education at school age and preschool, as well as adequate food, thus to pass on an oral health quality [4].

An analysis of the epidemiological profile of dental caries in children was held 12 years in the city of Lajeado / RS, using the DMFT index between the period 2002-2007, due to the

study were examined 112 students from municipal public. After collecting data they were analyzed from the conditions of permanent teeth; caries experience according to the gender of school and comparison between school more joined the oral health program and less adhered. Thus, it was concluded that there was an improvement in DMFT index of 3.82 to 2.7. However, what is needed is permanent these educational activities in oral health [25].

In 2013 it was carried out a survey to assess the impact of severe early childhood caries in quality of life related to oral health of preschool children in social deprivation and can confirm that this type of caries had greater negative impact on quality of life compared to caries free groups and no severe early childhood caries [12].

A comparison of caries experience in school from 3 to 6 years of public institutions of early childhood education that had not had dental care in Goiânia / GO (2001) was conducted for this we used 275 children attending institutions benefit from assistance dental and 261 children institutions do not benefit from dental care. It was observed a higher number of children with teeth restored in institutions with dental care, but in relation to caries prevalence was observed a difference between the two groups [11].

More effective measures to combat tooth decay would be through earlier performances possible, ie preschool, because the sooner it is affected the child by pathological microorganisms in most deciduous dentition the prevalence of caries in this dentition, and so causing also a strong predictor of caries in permanent teeth [4, 7, 18, 29].

The introduction of oral hygiene habits in daily life is one of the main care to maintain the general health of an individual. Thus, by brushing the biofilm is disorganized, preventing the formation and release of demineralisers acids that are responsible for the carious process and the periodontal disease [15, 23].

The World Health Organization (WHO) has established, since the 60s, standards for epidemiological surveys of dental caries. This standardization is offered to countries and researchers to be able the results of comparisons [14, 15, 23]. The most appropriate method of clinical diagnosis of dental caries epidemiological surveys in oral health is the visual-tactile [6, 34]. These surveys, in their great majority, are made according to WHO standards, using as an evaluation method checking teeth decayed, missing or extracted and restored (DMFT / Ceo-D).

Due to the great importance of preventing caries in order to obtain a correct development of the entire face, requires greater efficiency in the measures taken to be provided in a decrease, especially in childhood. In Brazil, it is possible to observe an unequal distribution of dental caries throughout the country, being in better conditions the states of South and Southeast compared to the Northeast [10, 17, 33].

Mostly school epidemiological investigations are made at the national level, showing an overall condition of the problem. Already local surveys are important to express the local reality of each region or municipality, so that the appropriate measures for improving the oral situation of children are taken. For this matter, this study aims to determine the oral health status of the students of the Municipal Children's Education Schools in New Granada, São Paulo, since it had not yet been implemented and there are no effective preventive measures these institutions.

With the results that will be obtained here, you can make a plan for management and evaluation of policies to improve the oral health of school children. With example of some countries in Asia and Europe [14,15].

## CONCLUSION

This study indicated that oral health of children of New Granada urgently needs a bandage oral health program, but without a shadow of doubt preventive. Health starts from the mouth and the transmission should be reduced, for this is indicated rigorous design guidance and family education in the care of the oral health through lectures in schools with children and their families. Reinforce the importance of controlling diet for a healthy life and a mouth without teeth decayed.

## Competing interests

The authors declare que they have no competing interests.

## References

1. Antunes, JLF; Peres, MAP (2006). Fundamentos de Odontologia: Epidemiologia da Saúde Bucal. Rio de Janeiro, Guanabara Kougan, 441p.
2. Baldini MH; Narvai PC; Antunes JLF (2002). Cárie dentária e condições socioeconômicas no Estado do Paraná, Brasil. Cad. Saúde Pública, Rio de Janeiro; 18 (3): 755-763.
3. Barbosa APM.; Kriger L; Moysés ST.; Moysés SJ (2007). Prevalência da doença cárie em crianças de cinco anos de idade na cidade de Curitiba – análise crítica. Epidemiol. Serv. Saúde, Brasília.
4. Benigna, MJC.; Neto, JMS (2004). Impacto das doenças carênciais na saúde oral, João Pessoa. Idéia; 275-315. 4.
5. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde (2004). Departamento de Atenção Básica. Projeto SB Brasil 2003: condições de saúde bucal da população brasileira 2002-2003: resultados principais / Ministério da Saúde, Secretaria de Atenção à Saúde, Departamento de Atenção Básica. – Brasília: Ministério da Saúde, 68.
6. Brasil (2001). Manual do examinador. Projeto SB Brasil: condições de saúde bucal da população brasileira.
7. Cypriano S (2003). Saúde bucal dos pré-escolares, Piracicaba, Brasil, 1999. Rev. Saúde Pública; 37 (2): 247-253.
8. Damle SG.; PATEL, AR. (1994). Community Dent OralEpidemiol 22: 62–3, 5.

9. FDA/WHO (2000). Global goals for oral health by the year. *Int Dent J* 1982; 32:74-7.
10. Ferreira LL.; Ferreira-Nóbilo NP.; Gibilini C.; Sousa MLR (2014); Longevidade de Restaurações Atraumáticas realizadas por graduandos de Odontologia. *Rev. odontol. UNESP*. 43 (4) Araraquara .
11. Freire MCM (2009). Experiência de cárie em crianças de instituições de educação infantil com e sem assistência odontológica. *Rev. Odont. Ciênc. Goiânia*; 24 (1) : 64-70.
12. Gomes, PN (2013). Impacto da cárie precoce severa na infância na qualidade de vida relacionada à saúde bucal de pré-escolares sob privação social *Natal; s.n; jul.60 p. graf. (BR)*. Tese em Português | BBO - odontologia (Brasil) | ID: bbo-39938.
13. Hamada, S; Slade, HD (1980). Biology immunology and cariogenicity of *Streptococcus mutans*. *Microbiol. Rev.*, Washington, v.44, p.331-384.
14. Hilt A; Rybarczyk-Townsend E; Wochna-Sobanska M (2014). Dental status of junior high school students in Łódzkie voivodeship. *Przegl Epidemiol*; 68(1): 59-64, 143-6, ID: mdl-25004633.
15. Jodkowska E; Wierzbicka M; Struzycka I.; Rusyan E (2014). Polish public programmer of dental caries prevention in children aged 6, 12 and 18 years in 2012. *Przegl Epidemiol*; 68(1): 45-52, 133-7, ID: mdl-25004631 .
16. Kulkarni, OV; Chan, KH; Sandhan, HJ (1989). An investigation into the use of restriction endonuclease analysis for the study of transmission of *Streptococcus mutans*. *J. Dent. Res.* v.68, p.1155-1161.
17. Lucas SD; Portela MC; Mendonça LL (2005). Variações no nível de cárie dentária entre crianças de 5 e 12 anos em Minas Gerais, Brasil. *Cad. Saúde Pública*, Rio de Janeiro; 21 (1): 55-63.
18. Maia AS (2007). Prevalência de cárie em crianças de 0 a 60 meses, na cidade de Manaus. *ConScientine Saúde*, São Paulo. 6 (2) : 255-259.
19. Ministério Da Saúde (1988). Secretaria Nacional de Programas Especiais de Saúde. Divisão Nacional de Saúde Bucal. Levantamento epidemiológico em saúde bucal: Brasil, zona urbana, 1986. Brasília (DF).
20. Ministério Da Saúde (2010). Departamento de Atenção Básica, Coordenação Nacional de Saúde Bucal. Projeto SB Brasil 2010. [acesso em 2011 Jul 10]. Disponível em: <[http://189.28.128.100/dab/docs/geral/projeto\\_sb\\_2010\\_relatorio\\_final.pdf](http://189.28.128.100/dab/docs/geral/projeto_sb_2010_relatorio_final.pdf)>.
21. Moreira, M; Poletto, MM; Vicente, VA (2007). Fatores determinantes na epidemiologia e transmissibilidade da doença cárie. *Rev. Odonto Ciênc.*, Porto Alegre, 22; 56.
22. Napimoga, MH; Hofling, JF; Klein, MI; Kamiya, RU; Gonçalves, RB (2005). Transmission, diversity and virulence factors of *Streptococcus mutans* genotypes. *Journal of Oral Science*, 47, 2, 59-65.
23. Narvai PC (1996). Diagnóstico de saúde bucal. São Paulo: HSP-FSP-USP.
24. Oliveira J; Traebert JL (1996). Prevalência de cárie dental em escolares do município de Blumenau-SC. *Rev Ciênc Saúde*; 15:220-36.
25. Organização Mundial Da Saúde (1997). Levantamentos em saúde bucal: métodos básicos. 4 ed. ORH/EPID.
26. Peres KGA.; Bastos JRM; Latorre MRDO (2000). Severidade de cárie em crianças e relação com aspectos sociais e comportamentais. *Rev. Saúde Pública*; 34 (4): 402-408.
27. Pereira, AC (2003). Odontologia em Saúde Coletiva: Planejando Ações e Promovendo Saúde. São Paulo: Ed. Artmed, 440.
28. Pimenta FC; Marin JM; De Uzeda M.; Ito IY (2001). Prevalência de estreptococos do grupo *mutans* em 93 membros de seis famílias brasileiras. *Pesqui Odontol Bras*; 15(3):181-6.
29. Rihs LB; Sousa MLR; Cypriano S; Abdalla NM; Guidini DDN.; Amgarten C (2007). Atividade de cárie na dentição decídua, Indaiatuba, São Paulo, Brasil. *Cad. Saúde Pública*, Rio de Janeiro; 23 (3): 593-600.
30. Silvia SRC; Fernandes CE; Alves RF (2007). Condição de saúde bucal de escolares e pré-escolares, Araraquara – SP, 2004. *Rev. Odontol. UNESP*; 36 (2): 145-150.
31. Socransky SS; Haffajee AD (2002). Dental biofilms: difficult therapeutic targets. *Periodontol* 2000, 28:12-55.
32. Souza SMD (1996). CPO-D brasileiro aos 12 anos tem redução de 53,22 %. *Rev ABO Nac* (8):1-6.
33. Tengan C; Kozłowski FC; Rosário ML (2007). Prevalência de cárie em bebês e pré-escolares de Brotas, SP, Brasil. *Odontologia e Sociedade*; 9 (2) : 24-30.
34. Wong MC; Lu HX; Lo EC (2012). Caries increment over 2 years in preschool children: a life course approach. *Int J Paediatr Dent*; 22(2): 77-84. ID: mdl-21771124.

\*\*\*\*\*

#### **How to cite this article:**

Taylane Soffener Berlanga De Araújo *et al.* 2016, Epidemical Survey on Caries Using Dmf Carried Out Among The Children'S with Five Years Old. *Int J Recent Sci Res.* 7(3), pp. 9757-9761.

T.SSN 0976-3031



9 770976 303009 >