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D206

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***Salivary Periodontopathic
Bacteria in Children and
Adolescents with Down
Syndrome***

What is the author's central purpose? Is it clearly stated?

The author's purpose is clearly stated from the very beginning of the research article. The purpose of this article is to both assess and compare salivary periodontopathic bacteria between groups of Down Syndrome and non-Down Syndrome children and adolescents.

Write a 150- 200 word summary of the article that accurately conveys the content of the article.

Down syndrome is a genetic disorder that results from a trisomy on chromosome 21 and is present in approximately 1 in 600 to 1 in 1,000 live births. Some reports have described a high prevalence of periodontal disease in children with Down Syndrome. The increased prevalence and severity of this disease in individuals with Down Syndrome can be attributed to factors such as motor difficulty in performing oral hygiene, immune deficiency and the early and enhanced colonization of the oral cavity with periodontopathic bacteria.

This research, in particular, is focused in the comparison of bacterial findings in the salivary components of a group of children and adolescents with Down Syndrome, and a second group without Down Syndrome. The sample size of this research was that of 30 children and adolescents with Down Syndrome and an equal number of children and adolescents without the disease. Salivary samples and periodontal probing measurements were strategically taken in equal manners and amounts from each trial subject.

After careful and microscopic evaluation, the research findings showed and higher prevalence of periodontopathic bacteria in those individuals with Down Syndrome than those without the disease. These further link the high prevalence of periodontal disease in children and adolescents with Down Syndrome.

Does the work meet the standards to be considered an appropriate/academic/scholarly source? Justify your choice.

Yes, this work meets the standards to be considered an appropriate/academic/scholarly source. The main qualification for this work is the fact that it has been peer reviewed. This means that the content of this work has been reviewed and approved by other experts in the field and not just the authors. This work also contains all of the parts of an adequate research(Abstract, Introduction, Materials and Methods, Results, Discussion, Conclusions, References), and is a Journal (best sources for current information) which was published less than 5 years ago.

Are the qualifications of the author(s) appropriate for an academic article? Briefly describe the author's qualifications.

I believe the authors' qualification to be appropriate for an academic article. All six authors have degrees and expertise (titles) in either, general dentistry, pediatric dentistry, ecology and molecular biology of microorganisms or statistical research in science.

When was the work published?

This work was published on October 11, 2016.

Is the experimental design clearly described? Describe the design in your own words.

The experimental design is clearly described as an observational cross-sectional study.

This work follows a research design that is both quantitative and qualitative. It was conducted to evaluate both the amount (numerical value) and type (non-numerical) of periodontopathic bacteria in the saliva that are considered responsible for the establishment of periodontal disease.

Have the possible influences on the findings been identified and controls instituted?

Describe and evaluate the use of controls and possible influences.

The possible influences on the findings have been described as the presence of a motor difficulty in performing oral hygiene and an immune deficiency. These two factors play a crucial role in the presence of a higher amount of periodontopathic bacteria in the saliva of the children and adolescents with Down Syndrome. The control group in this research were the 30 children and adolescents who did not have Down Syndrome. The higher ability and dexterity for oral hygiene, along with a better immune system, greatly influenced the lower level findings of periodontopathic bacteria in the control group.

Has the sample been appropriately selected (if applicable)? Describe the sample used in the study, and evaluate its appropriateness.

The study sample for this research consisted of thirty children and adolescents with Down Syndrome, and thirty children and adolescents without Down Syndrome. All study samples were selected among individuals in the same age group (3-12) with primary or mixed dentition. None of the participants in either group presented with other medical conditions or medications that would influence their periodontal status. Children and adolescents who were undergoing orthodontic treatment and/or were being treated with antibiotics were excluded.

I would consider the sample to be appropriate to this study because the inclusions and exclusions make for an accurate result. Everything has been carefully chosen to filter out biased data and has only left us with a black and white result, free of gray areas; children and adolescents with Down Syndrome are more susceptible to periodontal disease.

Is the experimental therapy compared appropriately to the control therapy? Describe and evaluate the use of the control group.

During this research, both the experimental group and the control group were compared/assessed equally. Both groups were subjected to full dentition probing, plaque index analysis and a collection of saliva samples for microscopic evaluation. All tests were conducted under the same protocols and were evaluated under the same guidelines.

Is the investigation of sufficient duration? Evaluate, and explain your reasoning.

The authors fail to state the duration of the investigation. There is only mention of the time frame in which the saliva samples were collected. Such samples were collected from 8:00 a.m. to 12:00 noon and at least one hour after brushing or rinsing.

Have the research questions or hypothesis been answered? Restate the research questions and/or hypotheses in your own words, and describe if or how they are answered.

The hypothesis in this research has certainly been answered. Children and adolescents with Down Syndrome are at higher risk of developing periodontal disease. The researcher was able to show that the prevalence of this disease among individuals with Down Syndrome is due to the high count of periodontopathic bacteria present in their saliva. These periodontopathic bacteria are more prevalent in children and adolescents with Down Syndrome because of the lack of ability to perform adequate oral hygiene, and because of the syndrome related immunodeficiency.

Review the results in light of the stated objectives. Does the study reveal what the researcher intended?

Indeed, the study does reveal what the researcher intended. The researcher was aware of previous studies which concluded in the same result and so, this too was expected to reveal the same answers. Previous studies revealed that periodontopathic bacteria was more prevalent in the saliva of children and adolescents with Down Syndrome than those children and adolescents without the genetic disorder.

Do you agree or disagree with the article and findings? Explain why?

I completely agree with the article findings. I believe the samples for this research were appropriately chosen in order to conclude in an unbiased result. I also believe that the findings do correlate with the current statistics of periodontal disease among individuals with Down Syndrome. It makes perfect sense that someone who is unable to properly brush and floss, would have more bacteria in their mouth and therefore more disease. Add to that, the fact that the same person is immunocompromised, and you pretty much have a perfect recipe for periodontal disease.

What would you change in the article? Why? Think outside of the box. What would you add or delete.

Instead of change, I would add to this research as an additional sample of individuals who are of adult age. I would add a control group for adults (20-30) without Down Syndrome and a group of the same age range who have Down Syndrome. I believe the results would be even more alarming because at that age, most parents are no longer assisting with the oral care of the individuals with Down Syndrome and therefore, more probability for periodontal disease is present. Periodontal disease is not only a disease that affects children. It affects people of all ages and is fully dependent on periodontopathic bacteria present in the mouth. Adding an adult sample to the study would shed even more light on the prevalence and severity of periodontitis among people of all ages who are diagnosed with Down Syndrome.

