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Internet Assessment on Pit and Fissure Sealants in Children.

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ABSTRACT

Pit and fissure sealants are tooth colored materials that are applied on the occlusal surfaces of the posterior teeth in deep grooves, pits and fissures. They protect the tooth from various bacterial plaques in these caries prone areas of the teeth. The sealants protect these areas by sealing of the entrance to bacteria which give rise to dental caries in susceptible individuals especially in children. Pit and fissure sealants are now commonly being used due to the increase in the awareness among public about dental caries prevention and people are getting to know about these materials utilizing the massive energy source which is easily available to them, the internet. This quantitative analysis studies the internet assessment of pit and fissure sealants in children using the popular search engine Google. In this study the online search results were analysed based on the guidelines given for pit and fissure sealants by professional dental associations.

Keywords: Pit and fissure sealants, dental sealants, sealants

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INTRODUCTION

Sealants are used to reduce the risk of caries in susceptible pits and fissures. It has been described as a material placed into the pits and fissures of caries-susceptible teeth that micromechanically bonds to the tooth preventing access by cariogenic bacteria to their source of nutrients. Placements of resin-based sealants in children and adolescents have shown a reduction of caries incidence of 86% after one year and 58 % after four years. Early pediatric dental attendance could be positively influenced if parents knew of the benefits of application of pit and fissure sealants to prevent dental caries. One possible source of information is the internet, which has become an increasingly important platform for obtaining healthcare related information [1]. The aim of this study was mainly to investigate the internet assessment on Pit and Fissure Sealants in children and whether online information provided in various public and private sites are in accordance with the guidelines given by professional dental associations to the people searching about pit and fissure sealants online.

MATERIALS AND METHODS

This study was a quantitative analysis of online information relating to the "Internet Assessment on Pit and Fissure Sealant in Children". For the study seven professional dental associations were chosen at random to refer the guidelines given for pit and fissure sealants for children. The professional dental associations referred for the guidelines are as follows:

1. American academy of paediatric dentistry
2. European academy of paediatric dentistry
3. International association of paediatric dentistry
4. Indian society of pedodontics and preventive dental health
5. Dental council of India
6. British society of paediatric dentistry
7. American dental association

After referring to the guidelines, five search terms were chosen to analyze the results for the study. The search terms used online for information regarding Internet assessment on pit and fissure sealant in children are Sealant, Dental sealant, Fissure sealant, Resin sealant and Pit and fissure sealant. By using selected search terms, online information regarding the Internet Assessment on Pit and Fissure Sealant in Children was searched via the Google search engine under the Indian domain (location predetermined at Chennai, India; classic mode, URL: <http://www.google.co.in/>) on 8th December 2013 from the time period of 8.30am to 10.00pm ISD [2]. The first 50 search results for each of the selected search terms were compiled and analysed. The analysis was broadly classified based on the type of site and the recommendations available in these sites [3].

The guidelines for Pit and fissure sealants according to The American Academy of Pedodontics are as follows:

1. The placement of sealants should be limited to previously unrestored pits and fissures.
2. The placement of sealants should usually be accomplished as soon as possible following the eruption of the tooth.
3. Presence of interproximal caries should be ruled out prior to the placement of pit and fissure sealants.
4. Patients receiving sealants should ideally be on some type of preventive fluoride program to reduce the risk of smooth surface caries

The guidelines referred from various professional dental associations like AAPD, EAPD, DCI, etc. [4] and the first 50 online sites obtained for each selected search word were compared and analysed in order to understand the number of sites which give similar guidelines and also to study the distribution of search result with similar guidelines and also various additional information given in those sites.

RESULTS

The search words chosen were used and the first 50 results for each word were analysed and grouped in groups of ten resultant sites. Each result site were opened individually and checked for the pit and

fissure guidelines for children. Each one of the results was checked for the accuracy and relevance levels to the pit and fissure guidelines for children. The results were then tabulated based on the number and distribution of search results providing accurate information for pit and fissure guidelines for children.

Number and distribution of search results with accurate information

Search phrases	Total	Search ranking				
		Top 10	11-20	21-30	31-40	41-50
Sealant	18(7)	5(3)	4(1)	4(2)	3(1)	2 (0)
Dental sealant	26(8)	9(4)	7(2)	4(1)	5(1)	1(0)
Resin sealant	24(9)	8(4)	6(2)	6(2)	3(1)	1(0)
Fissure sealant	27(8)	7(4)	5(2)	6(1)	5(1)	4(0)
Pit and fissure sealant	34(7)	9(3)	8(1)	6(2)	6(1)	5(0)

When the search results were analysed not all the resultant sites provided exact required information relevant to the study. In order to overcome this difficulty the sites were broadly classified into two groups namely the public/corporate sites and the private sites. These sites were further subcategorized as organizations and government sites for the former group and dental professional and non-dental professional sites for the latter group. Then the search results were analysed and tabulated depending on the availability and the accuracy of information provided by the sites into three distinct groups. These groups are the sites which provided adequate information, sites which provided in-adequate information and finally the sites which provided totally irrelevant information regarding the guidelines for pit and fissure sealants in children.

Analysis of sites:

Availability and accuracy of pit and fissure sealant by various types of sites

Sites	Total	Types of sites			
		Public/ corporate		Private	
		Organization	Government	Dental professional	Non-dental professional
Adequate information	60	18	14	16	12
In-adequate information	79	11	8	22	38
Irrelevant information	72	2	5	13	52
Total contributing entries	211	58(27.49%)		153(72.51%)	

DISCUSSION

Pit and fissure sealants are materials that are used in the pits and fissure areas of teeth in order to create barrier which protects the sealed surface from dental caries [5]. The major aim of the pit and fissure sealants is to prevent or stop the development of dental caries which is achieved by providing a smooth surface that is easily accessible for both the saliva and the toothbrush bristles when cleaning the teeth [6]. Pit and fissure sealants are indicated in certain conditions like teeth with high risk of caries development, poor oral hygiene maintenance, presence of deeper retentive grooves on their teeth, patients with orthodontic appliances, etc. [7]. Similarly they are contraindicated in patients with low caries risk, teeth with shallow self cleansing grooves, patients with good oral hygiene maintenance, etc...

With an increase in the awareness levels of preventing dental caries people have started embracing the importance of pit and fissure sealants [8,9]. This is achieved by the information provided by their dentists and also mainly by the information available online. So in order to understand the status of online information provided based on the guidelines provided for assessment of pit and fissure sealants in children a quantitative analysis is done using certain selected keywords.

Limitations

The study also has some limitations. The study used only one search engine Google for analysis and did not include other major search engines like Yahoo.com, Bing.com, Askme.com, Aol.com, etc... It had limited the search to only first fifty results and also used only five search keywords. Furthermore, the results were analysed by the volunteers belonging to the same background, as they were all educated in the field of science and not from people belonging various diverse backgrounds in order to get a more conclusive results. Also there were many repetitions in the search results which had to be eliminated, thus further reducing the accuracy of the study based on the results. One of the major limitations in an internet based study is its lack of reproducibility due to various inter and intra search engine variability. Also the search results are constantly updated and re-ranked based on the daily development and advancements in relevant fields.

CONCLUSION

While this study provides the readers an overview on the status of online results based on the guidelines provided for the assessment of pit and fissure sealants in children, a much larger scale study with larger sample size and also incorporating many other search engines should be done for a more in depth understanding of the results

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