

## Original Article

# Quality Assessment of Information About Pit and Fissure Sealants in Persian Websites in 2012

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## Abstract

**Objectives:** Despite the increasing use of Internet, there is no supervision over the accuracy and quality of the information provided in the web. To deal with this problem, health specialists should take part in planning, publishing and supervision of online health-related information. The aim of this study was to evaluate the quality of information related to pit and fissure sealants in Persian websites.

**Materials and Methods:** In this cross-sectional study, Persian websites providing information about fissure sealants were found using Google search engine. The searched keywords according to the MeSH database were "patient education" and "fissure sealant". After applying the exclusion criteria, 37 websites out of 500 initial links remained in the study. These websites were evaluated based on a researcher-made checklist. The validity and reliability of the checklist were evaluated and confirmed. Descriptive analysis was applied to report the results of our study using SPSS version 11.5.

**Results:** The average score for the quality of information was 22.46 out of 38. The minimum scores were 16 and 30 and belonged to Pezeshkanemrooz.com and Asa85.blogfa.com, respectively. The results showed that 62.2% of the answers were scored 2-4 and 37.8% were scored 1; therefore, the overall quality of the published content was rated to be moderate for 62.2% and low for 37.8% of the websites.

**Conclusions:** Overall, the quality of information related to fissure sealant provided in Persian websites was good; however, the information given was mostly incomplete and could be improved. The main problems were doubtful credibility and outdated information.

**Keywords:** Pit and Fissure Sealants; Patient Education as Topic; Internet; Retinoic acid

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## INTRODUCTION

In the olden days, the patients depended solely on health professionals to gain health information via conversations or from pamphlets, videos, or books. Even prior to surfing the Internet as a source of medical information, patients were interested to know more about their disease and discover facts concerning their diagnoses and seek more knowledge about their treatment choices. Even the MEDLINE searches in libraries and public institutions chiefly provide patients with peer-reviewed medical articles [1]. The main barrier limiting the use of Internet to gain information is not the difficulty of finding healthcare knowledge, but rather the difficulty of finding logical and trustworthy information [2,3]. A large proportion of the population seeks

health information on the worldwide web these days [4-6].

Although patients browsing the Internet for health information can look for thousands of websites, it is laborious for them to decide on the believability of the information they obtain [7]. Due to concerns about the validity of information available online, many health-care professionals believe that gaining health-related advice from the Internet can be harmful [8]. The deficiency of online information can be due to inaccurate, biased, and out-of-date resources and patients may therefore make inappropriate decisions about treatment based on potentially poor-quality information. In a cross-sectional study by Griffiths and Christensen on the quality of web-based information, they concluded that the

information on the web needs to be more evidence based [9].

There are a few studies available on the quality of information in the web about dental treatments. Pit and fissure sealants are primary preventive procedures for dental caries. Pit and fissure sealants are chemically-active liquid materials that are placed in the occlusal pits and fissures of caries-susceptible teeth forming a micromechanically bonded protective layer that prevents the invasion of cariogenic bacteria and their access to nutrients [10].

Prevention is superior to treatment; this applies to the dental caries as well. Understanding the level of prevention can be complicated and difficult for patients [11].

The aim of this study was to evaluate the quality of websites providing information about pit and fissure sealants.

## **MATERIALS AND METHODS**

A pilot study using three different search engines namely Google ([www.google.com](http://www.google.com)), Yahoo ([www.yahoo.com](http://www.yahoo.com)), and Ask Jeeves ([www.ask.com](http://www.ask.com)) was performed at the end of June 2012. The key terms 'pit and fissure sealants', 'patients education' and the equivalent Farsi word 'shiarpoosh' were searched to obtain information.

As it is improbable that patients will investigate beyond initial pages of a search, the first 500 links generated by Google were pondered. Discussion groups, news, video feeds, and duplicate sites were excluded and only 37 relevant websites suitable for patients remained. These 37 websites were scrutinized using DISCERN instrument [6] which rates the nature of information on treatment options for health problems and includes 16 questions (Table 1). Each question can be scored from 1 to 5 depending on how well it supports the specific criteria in the question. The maximum score obtained was 80 and websites were graded to yield a relative index of the parameters of the

consumer information they embodied [6]. Twenty percent of the cases were used for assessment of inter-rater and intra-rater reliability. The tests were carried out by a researcher and a specialist in dental public health, using DISCERN instrument. The Kappa values were acceptable ( $K=0.7$  and  $K=0.8$ , respectively). There was no controversy between evaluators regarding the descriptive values as the instrument's guidelines explained each topic in detail [6].

American Dental Association (ADA) guide-lines for patients and professionals [12] were used as gold standards to check the answers on whether the information was based on high level of evidence. Descriptive analysis was applied to report the results of our study using SPSS version 11.5.

## **RESULTS**

Ninety-two percent ( $n=468$ ) of the websites were excluded from the analysis. These consisted of 3% news and video feeds, 27.3% academic press, 52.4% abstract listings, discussion group, duplicate sites and the sites that only mentioned the name of fissure sealant. Of the remaining 37 websites that were scored, 6.8% were e-journals, 21.6% personal websites of dentists, 10.8% govern-mental health-related websites and 10.8% other websites.

According to the quality of the scientific content of websites (Table 1), 94.6% of the web pages did not have evidence-based references. In addition, approximately 48.6% of them did not have a publication date. Based on the gold standards, the information in the majority of websites (74.4%) was compatible with ADA guidelines.

Answers to questions 1-15 were yes, partially, and no (scored between 0-5). The results showed that 62.2% of the answers were scored 2-4 and 37.8% of them were scored one (Tables 1). According to the guideline, the last question (question 16) rated the overall quality of the

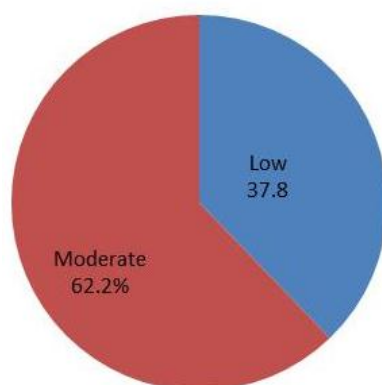
publication as moderate in 62.2% and low in 37.8% (Fig.1).

The greatest score obtained by one of the websites conforming to the DISCERN tool was 71 out of 80, and the lowest score achieved was 39 out of 80. The websites achieving the maximum and minimum scores were "Pezeshkanemrooz.com" and "Asa85.blogfa.com", respectively.

## DISCUSSION

This study was the first to assess the quality of information available on the Internet related to pit and fissure sealants in the Persian websites. The results of the present study showed that the accuracy of information was at the acceptable level and the majority of studies were in accord with the ADA guidelines [6,13]. In previous studies, the quality of information regarding breast cancer, depression and obesity was evaluated in which the accuracy of information was acceptably high [14,15].

It can be troublesome for patients to acquire reliable and meticulous information on the Internet. The information on websites can occasionally be of a higher value than the information in the leaflets available in clinics [16]. This study indicated that the quality of information on the Internet about pit and fissure sealants was moderate.



**Fig. 1:** The percentage of the evaluated web pages with different levels of quality

Some other studies reported that the quality of information available on the net about osteoarthritis, chronic pain and nutrition was poor [9,17-22].

Unlike the results of a study by Griffiths and Christensen [9], the results of the current study showed that the governmental, organizational and educational websites did not play an important role in providing information about fissure sealants and only four governmental websites were related to the fissure sealant topic. Two of the websites belonged to medical universities and included good-quality information. However, Diaz et al, [23] in 2002 and Hirasawa et al, [24] concluded that the governmental websites had poor quality. The findings of van der Marel et al, in 2009 showed that the commercial websites had high quality and governmental websites had moderate quality [25]. In this study, the number of governmental websites was limited (only four out of 37) but there was no significant difference between non-governmental and governmental websites and both had good quality.

Totally, the Google search engine provided more than a million links on pit and fissure sealants. In spite of the fact that such an enormous number of links is attainable, it is doubtful that patients will search beyond the top 500. Therefore, we restricted our study to the first 500 websites in line with the studies by Hargrave et al, [18] and Fox et al, [26]. Interestingly, only 37 of the top 500 websites were found to be in Persian language and contained relevant information. Further advancement of the Internet as a logical data source would significantly assist patients searching for supplementary information about pit and fissure sealants. In order to ensure the credibility of the information provided in the websites on pit and fissure sealants, websites may perhaps disclose their DISCERN score as a quality symbol for patients and professionals. One limitation of the current study was that

**Table 1:** The percentage of answers rating the quality of websites according to DISERN checklist

Questions	Answers*		
	No	Partially	Yes
1 Are the aims clear?	0	8.1	91.9
2 Does it achieve its aims?	67.6	8.1	24.3
3 Is it relevant?	56.8	13.5	29.7
4 Is it clear what sources of information were used to compile the publication?	94.6	5.4	0
5 Is it clear when the information was used or reported and/or publication was produced?	48.6	0	51.4
6 Is it balanced and unbiased?	0	21.6	78.4
7 Does it provide details of additional sources of support and information?	21.6	78.4	0
8 Does it refer to areas of uncertainty?	13.5	59.5	27
9 Does it describe how each treatment works?	16.2	21.6	62.2
10 Does it describe the benefits of each treatment?	0	0	100
11 Does it describe the risk of each treatment?	0	0	100
12 Does it describe what would happen if no treatment is performed?	16.2	8.2	75.7
13 Does it describe how the treatment choices affect overall quality of life?	62.2	24.3	13.5
14 Is it clear that there may be more than one possible treatment choice?	0	67.6	32.4
15 Does it provide support for shared decision-making?	35.1	10.8	54.1

\*Scorings of the answers are as follows: No=1, Partially=2-4, and Yes=5

there was no organized database for Persian health information websites.

## CONCLUSIONS

Overall, the quality of information related to fissure sealants on the Internet was good, yet they did not cover the entire required information. The main problem was that the websites did not provide credible and up-to-date information.

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