

Assessing the questionnaires on perceived oral healthcare need: A systematic review

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Review Article

Abstract

BACKGROUND AND AIM: Perception of the need for oral healthcare plays a key role in creating motivation and demand for utilization of oral healthcare services. Furthermore, people with perceived needs to oral healthcare, due to the higher profit potential of services, will be on higher priority for services. The aim of this study was to undertake a systematic review of the existing literature about questionnaires used for assessing the perceived oral healthcare needs.

METHODS: The search was conducted in PubMed, ISI and Scopus databases in March 2016. Questionnaire-based and the papers which aimed to determine the perceived need for any type of oral healthcare and dental treatment were included to this study. After determining the appropriate papers, related data were extracted and reviewed.

RESULTS: Out of 7069 records found, 190 questionnaire-based papers were included in the review. Ninety-four papers were related to the overall evaluation of oral healthcare need, which did not ask the need for types of oral healthcare service. Sixty-six papers studied the need for a specified dental service, and thirty papers recorded the types of oral healthcare service via asking the open or multiple choices questions. There were not comprehensive and standard questionnaires covering all the common types of oral healthcare services.

CONCLUSION: Despite the importance of considering the perception of needs for oral healthcare, there is a lack of the comprehensive and standard questionnaires. Studies aimed to assess perceived oral healthcare needs should use questionnaires which include appropriate items on common types of oral healthcare services based on the characteristics of the target group. Concordance with perceived and normative need is an issue that should be addressed in future researches.

KEYWORDS: Oral Health; Surveys and Questionnaires; Review; Need

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Oral health is an important part of general health and life quality.¹ Awareness of oral health needs in population can be useful for promoting the oral healthcare system.² According to Oxford Dictionary definition, a need is circumstances in which something is necessary. Community health needs assessment is used in evaluating the burden of disease, quantified estimation of population healthcare needs, ascertaining

needs patterns in the population, emphasizing on populations priorities and areas with unmet needs, setting goals to respond to unmet needs, and making decision how to use resources.³

Although there is no generally agreed definition of need, the taxonomy suggested by Bradshaw (1972) is recommended. He defined healthcare need as three categories. Normative need is based on experts'

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opinions, perceived (felt) need is a self-evaluation of healthcare need, and the expressed need is a felt need which has led to action to get health services.³

The most commonly used methods of assessing the need for dental care are based solely on clinical criteria. The limitations associated with a total reliance on clinical indicators and normative need have been realized as lack of objectivity and reliability, negligence of quality of life concept and psychosocial aspects, lack of consideration for health behaviors and patient compliance, and neglect of consumer rights.^{3,4}

In addition, need evaluation should include the patients' perceptions, the effect of ill-health on individuals and dysfunction levels.⁵ However, to evaluate psychosocial aspects of oral health, oral health-related quality of life measures have been well developed,⁶ but less effort has been made to develop structured questionnaires to comprehensively assess perceived oral healthcare needs. This is a necessity to develop a comprehensive and standard questionnaire which covers the perceived need for all the types of oral healthcare services. Therefore, the aim of this study was to carry out a systematic review of the existing literature on perceived oral healthcare need assessment in order to find standard and comprehensive questionnaires.

Methods

We conducted a systematic review of the available literature by searching PubMed, ISI and Scopus databases in March 2016 to find papers about the perceived need for oral healthcare. A broad search strategy by a wide range of terms was pursued to capture as many relevant studies as possible; and therefore, a sensitive electronic search strategy was designed using the following terms based on title and abstract: (subjective OR perceived OR expressed OR perception OR felt OR self-report* OR self-evaluate* OR self-assess* OR self-rate* OR reported OR unmet) AND (dental OR oral OR restorat*

OR prosth* OR denture OR implant OR orthodont* OR appliance OR gingiv* OR periodon*) AND (questionnaire OR interview OR survey) AND (Need). No date restriction was applied. Unpublished studies and non-English papers were not considered for inclusion in this systematic review. The adopted search strategy led to 7069 potentially relevant citations, which were transferred to the EndNote library. Papers were potentially suitable for inclusion which aimed to determine the perceived need for any types of oral healthcare and dental treatment by interview or questionnaire.

After elimination of duplicate references, the related papers were screened from the titles and abstracts. Full-texts were reviewed carefully. After determining related papers, the related data were imputed into an excel datasheet. Each paper data was extracted based on the name of first author, year of publication, target population, interview or self-administered questionnaire, if questionnaire validation was reported, and whether papers asked from perceived need to several or a specified type of oral healthcare services.

Results

Details of the identification, screening and selection process are presented in figure 1. We divided related papers into 3 categories. The first category included 186 papers related to the overall evaluation of perceived needs to oral healthcare, but in 92 citations the content of questions had not been mentioned clearly. Thus, these papers were excluded and 94 papers remained. The second category was 30 citations studied the perceived need for several types of oral healthcare services, and the third category included 66 citations evaluated the need for a specified type of oral healthcare services.

The first category was included 94 papers for the overall evaluation of perceived oral healthcare needs. Except for a study which used the specified score of an oral health-related quality of life measure as unmet oral healthcare need, these studies assessed the

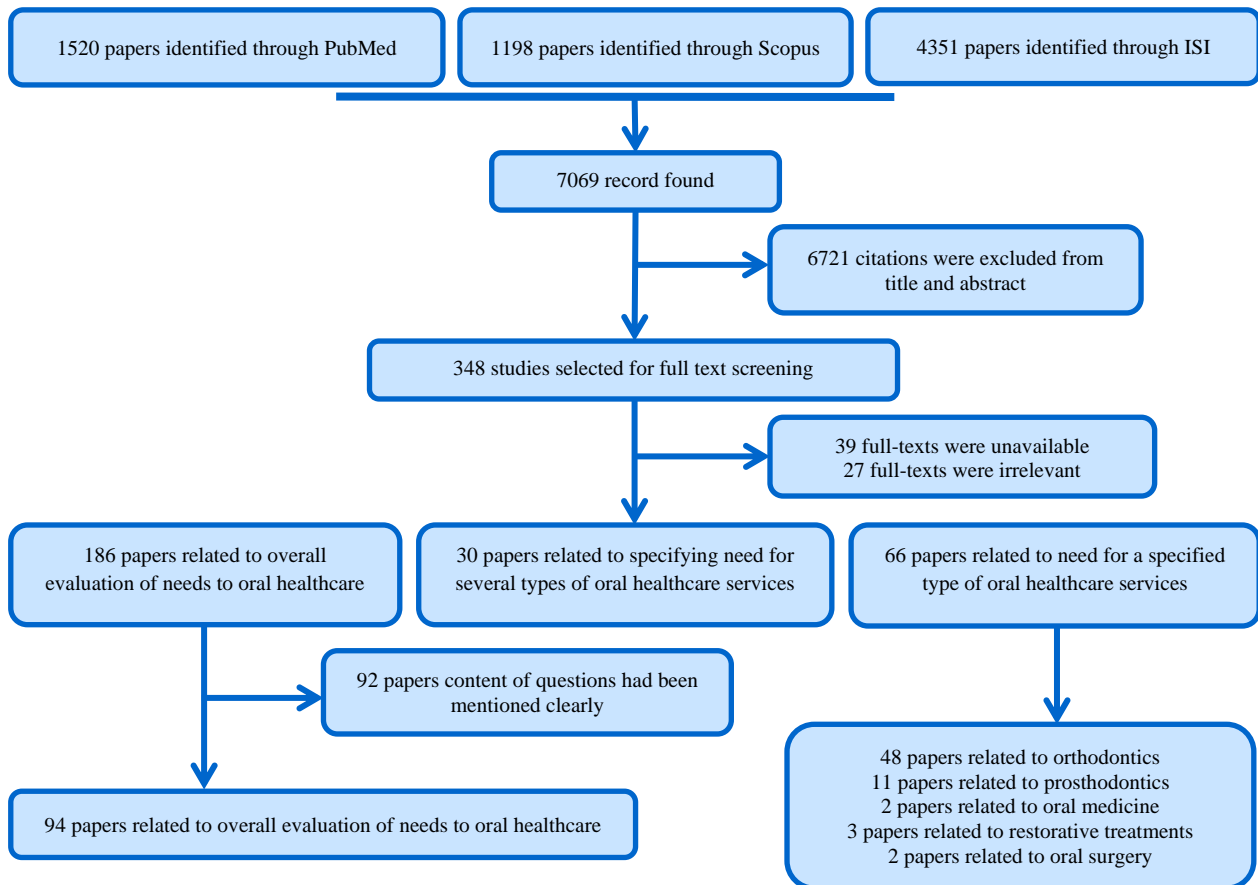


Figure 1. Flow diagram of studies on the perceived need for oral healthcare services

perceived needs by single question without asking the type of oral healthcare services. The

concept of different applied questions is presented in table 1.

Table 1. Types of questions applied for overall evaluation of perceived oral healthcare need

| Types of questions in reviewed studies and study reference number | Absolute and relative frequency (%) |
|--|-------------------------------------|
| Determining the specified score of the oral health-related quality of life measures as unmet oral healthcare need ⁷ | 1-1.6 |
| Estimation of perceived needs based on using of collection of variables (such as collection of self-reported general and oral health, self-perceived unmet need, and self-perceived pain) ^{8,9} | 2-2.12 |
| Rating the perceived needs based on an ordinal scale such as high or low need ¹⁰⁻¹⁴ | 5-5.31 |
| Determining unmet needs as under-utilization of dental services ¹⁵ | 1-1.06 |
| Considering need to dental services by asking perception of need for dental filling or extraction ¹⁶⁻²⁰ | 5-5.31 |
| Question of having unmet, feeling or perceived need for dental care ²¹⁻⁴⁸ | 28-29.7 |
| Inability to get oral healthcare needed services during the specified period of time (18 and 24 months ⁴⁹ , one-year ⁵⁰⁻⁷⁵ , 6 months ⁷⁶⁻⁸² , 3 months ⁸³) | 35-37.2 |
| Determining unmet need as delay or failure to receive needed dental care ^{56,60,61,63,68,71-74,84} | 10-10.6 |
| Inability to get oral healthcare needed services due to cost ^{50,84-86} | 4-4.25 |
| Asking if respondent gone to the dentist tomorrow do they think they would need any treatment or not ⁸⁷⁻⁹⁰ | 4-4.25 |
| Unmet dental need defined as last visit to the dentist more than 1 year before the interview when the participant reports difficulty chewing hard foods ⁹¹ | 1-1.06 |
| Considering need for check-ups and preventive services in the content of the question that majorities of these papers were applied for children ⁹²⁻⁹⁹ and one paper applied for adults ¹⁰⁰ | 9-9.57 |

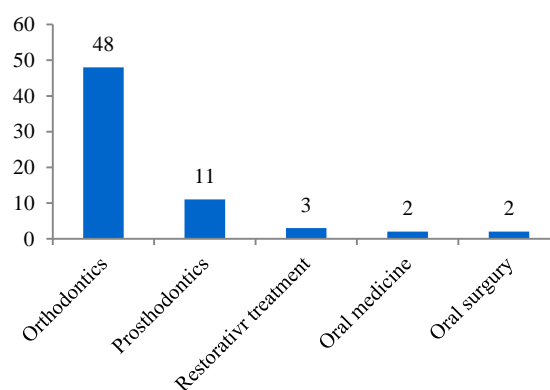
Table 2. Related items to each type of dental service

| Types of dental service |
|---|
| Restorative treatment filling, sensitive teeth, decayed teeth, broken teeth, esthetic problems, cosmetic dentistry, tooth cavities, dental caries, broken tooth, restoration, tooth that hurts, chipped tooth |
| Orthodontics orthodontics, braces, need to improve appearance, teeth straightening, fill in gaps between teeth |
| Periodontics gum disease, periodontics, scaling, gum surgeries, gum treatment, swollen gum, loose tooth, gum soreness, gingival bleeding, gum bleeding, tooth mobility, gum boil, infected gum, polishing, gingival inflammation, gum hurt |
| Prosthodontics difficulty chewing, crown, bridge, tooth replacement, denture, denture work, new denture, denture repair, partial denture, denture adjustment, prosthesis, missing, cap, grinding or clenching of teeth |
| Oral medicine mouth sores, mouth ulcer, oral medicine, bad breath, dry mouth, halitosis, having white patch on the tongue, having cracks on the corners of the mouth, having white patch in the mouth, burning sensation in the mouth or on the tongue, care or assessment of specific problem (pain, infection, injury), current pain |
| Surgery extraction, abscessed tooth, teeth pulled, implants |
| Endodontics root canal, tooth or dental ache, endodontic, relief of pain, pain, oral pain |
| Prevention cleaning, X-rays, check-up, hygiene, examination, preventive care |

The second category was included 30 papers which had evaluated perceived need by asking types of oral healthcare services and applied for the adult population. In this category, common format of questions was asked in a close-ended format including a combination of questions by yes/no answers followed by multiple choices of items related to oral problems or dental treatments.

We extracted all proposed dental items and classified them to related dental services. Prosthetic services were the most frequent items which followed by restorative and periodontal services. Moreover, related items for assessment of the need for each type of dental services were asked by different terms. Items on restorative treatments had the most diversity. Related items to each type of dental service and different applied terms are presented in table 2.

In the third category, 66 citations were studied the perceived need for a specified type of oral healthcare services. A number of related papers to each dental service are presented in figure 2. Except for the papers related to perceived orthodontic treatment, other studies used limited items and applied to the adult population.

**Figure 2.** Numbers of related papers to each type of dental services

The prevailing target population of the orthodontic study was adolescents. For subjective assessment of orthodontic treatment, different items were used which presented in figure 3. Normative tools such as aesthetic component (AC) of the index of orthodontic treatment need (IOTN) were not included. Characteristics of the included papers in the second and third categories are presented in table 3.

59% of all the studies conducted by self-administered questionnaire. Characteristics of the included papers in the second and third categories are presented in table 3. Some papers

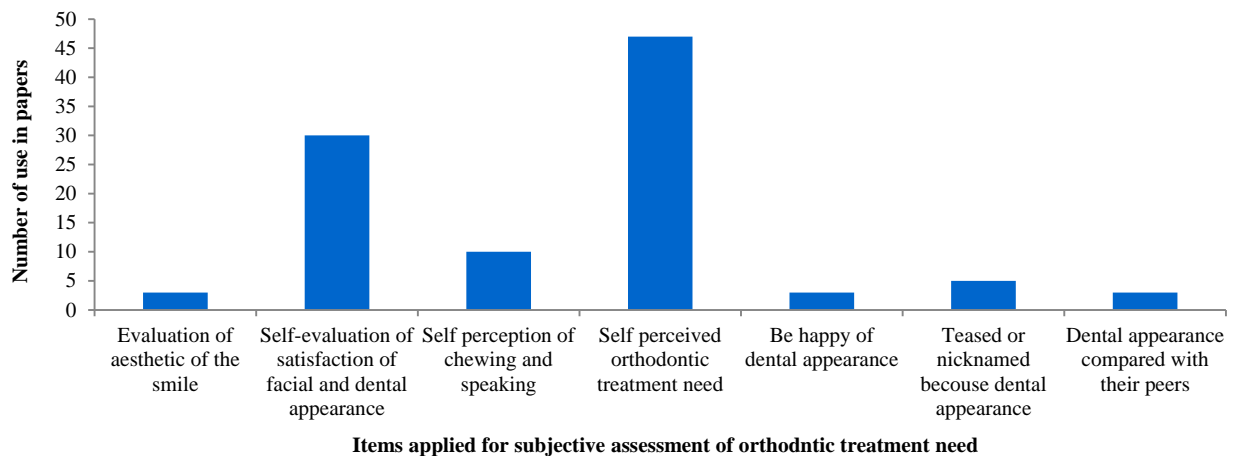


Figure 3. Number of items applied for subjective assessment of orthodontic treatment need

set in more than one category, so the sum of relative frequencies may be over 100%.

Discussion

For understanding perceived oral healthcare need, a valid and comprehensive questionnaire is one of the main prerequisites. In this study, we explored questions of the existing papers on perceived oral healthcare need to find standard, comprehensive and acceptable questionnaires.

Reviewing the literature showed a variety of measures has been used. Majority of included studies merely explored presence or absence of the perceived need for oral healthcare without asking a variety of oral healthcare services separately (the first category of included papers). For an overall assessment of perceived oral healthcare need, mostly two common formats of questions were used. Some of the papers asked the

current need for oral healthcare services, whereas the other papers, mostly evaluated the need for oral healthcare in terms of unmet need, were asked the inability to get oral healthcare needed services during the specified period of time. This time course was mostly a one-year period with this format: During the past 12 months, was a time you need dental care but could not get it? Yes, no.

It seems that this method of perceived need assessment may not give much information. In fact, by knowing the types of services required separately policy-makers will be capable of more accurate planning for oral healthcare services delivery. Papers, which evaluated several types of dental treatments, were widely varied in terms of the number and items related to each dental service. These items varied in terms of types of proposed items on oral healthcare services. However, there were some similarities between applied items.

Table 3. Papers included in the second and third categories

| Papers | Count of papers, number of references in the reference list | Year range of publication |
|--|---|---------------------------|
| Papers which asked types of oral healthcare services | I: 18 ¹⁰¹⁻¹¹⁸ Q: 12 ¹¹⁹⁻¹³⁰ | 1989-2013 1997-2016 |
| Prostodontics | I: 2 ¹³¹⁻¹³² Q: 9 ¹³³⁻¹⁴¹ | 2009-2013 1983-2012 |
| Orthodontics | I: 13 ¹⁴²⁻¹⁵⁴ Q: 35 ¹⁵⁵⁻¹⁸⁹ | 1991-2015 1983-2015 |
| Restorative treatment | Q: 3 ¹⁹⁰⁻¹⁹² | 2001-2014 |
| Oral medicine | I: 2 ¹⁹³⁻¹⁹⁴ | 1992-2016 |
| Oral surgery | I: 1 ¹⁹⁵ Q: 1 ¹⁹⁶ | 1994 2005 |

I: interview; Q: questionnaire

Most frequent items were related to prosthetic services which followed by restorative and periodontal services. Despite the importance of the prevention of oral problems, few items were about the need for prevention services. It may be due to the fact that people feel the need to dental services when feel the symptoms of oral problems. Furthermore, the utilization of oral healthcare services is influenced by socioeconomic factors so preventive cares may seem to be an unnecessary service.^{197,198} Applied items for assessment of the need for each type of dental services were asked by different terms. The most variety was related to items on restorative treatments. For evaluating the need to prosthetic treatment, often same and common items were used. Most frequent items were full denture related treatments after that fixed prosthesis was asked in terms of bridge and crowns. Need for periodontal treatment was often examined by asking the gum related symptoms like gum bleeding.

Besides, few studies have evaluated treatment needs for some of the oral lesions and most of them were in HIV patients (white patches in the mouth, having cracks on the corners of the mouth, burning sensation) or older adults (dry mouth). Also, the majority of papers that used denture related items had been applied to older adults and elderly. It shows that the applied items must be selected according to the target group.

Some of the studies in the second category used open questions and asked the respondent to specify all of their dental treatment needs. But this format may have problems. Response classification maybe hard, after all, respondents may not remember all of their dental treatment needs or reluctant to respond to questions that it takes a long time. Therefore, the responses to the close-ended questions may be more valid and reliable.¹⁹⁹ It is reasonable that a standard and comprehensive questionnaire for evaluating all the common types of oral healthcare services should be included

questions in several domains such as restorative, prosthetic, endodontic, periodontal and preventive services. As mentioned previously, it is better to apply close-ended question. Moreover, because each dental service may probably need more than the single item multiple-choice questions seem more suitable. With limited items, not including important symptoms of oral and dental diseases, all the types of oral healthcare needs may not adequately be assessed, resulting in underestimation.

For each dental service, use of the perceptible symptoms which is highly correlated with clinical finding may be suitable items. For instance, some of the studies evaluated restorative needs by word of "filling" but it looks applying items about main dental caries symptoms like cavities or hypersensitivity are more accurate. Also, asking the gum related symptoms, like gum bleeding and tooth mobility which highly correlate with clinical findings, appear to be appropriate items. Prosthetic services include a wide range of treatment options. So a comprehensive questionnaire should include more items for prosthetic services like the presence of missing and functional problems (problems with chewing and talking), getting new full or partial denture, crown and bridge and dental implant. Asking about a toothache is a suitable item for evaluating endodontic services. Moreover, preventive services should be included in the questionnaire by asking items on dental examination and check-up.

The third category was papers on specified types of oral healthcare services. The most of the papers that assessed perceived need for orthodontic treatment applied for adolescents (12-15-year old) and tried to do a comprehensive subjective assessment by structured questionnaires. However, few studies, which assessed perceived the need for other specified types of oral healthcare services, used the limited items by one or two questions.

We can say except for the papers related to

orthodontic treatment, less effort has been made to develop standard and comprehensive questionnaires to assess perception of other specified oral healthcare needs. For more accurate need assessment, it may be better to design a unique and standard questionnaire for perceived need for each type of dental services.

Using of validation methods were not always described, but were not used in the exclusion process. In the majority of studies, there was not a report on validity and especially reliability of the questionnaires and the results of these studies may be less accurate. Totally, almost more than half of studies used self-administered questionnaire and others conducted by face to face or telephone interview. Perhaps the most advantage of applying mail questionnaire is lower cost, but there is no one available to explain and clarify questions may be problematic especially for children and elderly.²⁰⁰

This study was carried out by some limitations. In this study, there was the lack of access to some of the full-text papers and were excluded from the study. In some full-text papers, the questions were not available, so the items were extracted from the results

and tables. Also, we did not include non-English papers in the review.

Conclusion

In conclusion, we can say that despite the importance and necessity of considering the perception of needs for oral healthcare, there is a lack of the standard questionnaires. The difference in applied methods for perceived need assessment may make problems in generalizing of the result of these studies. Therefore, it is absolutely necessary to design standard questionnaires by considering the difference in needs of various age groups. Results of this systematic review can help researchers to design an appropriate and comprehensive questionnaire for assessment of the perceived need for oral healthcare services. For maximizing the accuracy of the results of these questionnaires, accordance with perceived and normative need is matters that should be addressed in future research.

Conflict of Interests

Authors have no conflict of interest.

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