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Young adults' views on the relevance of three measures for oral health-related quality of life

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Abstract: *Objective:* The aim of this study was to explore the views of young adults on the relevance of three measures of oral health-related quality of life (OHRQoL). *Methods:* Sixteen young adults aged 21–29 years were interviewed. The selection was strategic with reference to age (21–25 years.; 26–30 years), sex and education (university degree; upper secondary school). The interview guide covered areas on the content and construction of the measures: The Oral Health Impact Profile (OHIP), the Oral Impacts on Daily Performances (OIDP) and the Oral Health-Related Quality of Life UK (OHRQoL-UK). The data were analysed using qualitative content analysis. *Results:* A theme expressing the latent content was formulated during the data analysis: 'young adults' own experiences were reflected in their views on the OHRQoL measures'; that is, the experiences of young adults of own oral problems and aspects that were found to be especially important for their age group influenced their view on the measures. The self-reported ability to understand and answer the questions varied and the perceived advantages and disadvantages were almost equally distributed among the three measures. *Conclusions:* The OHIP, OIDP and OHRQoL-UK were evaluated as being equal by the young adults in this study, with regard both to their pros and cons. The clarity of the measures was regarded as the most important factor, while the length and assessment period were less significant.

Key words: oral health; quality of life; questionnaires; young adult

Introduction

Oral health-related quality of life (OHRQoL) is affected by functional and psychosocial effects of oral conditions and, in turn, the way they affect health, well-being and quality of life (1). Inglehart and Bagramian defined OHRQoL as a person's own assessment of his or her well-being in connection with functional, psychological and social aspects, as well as pain and discomfort when these are related to orofacial concerns (2). Locker & Miller (3) found that younger adults were as likely as older adults to report oral health-related problems, such as dry mouth and problems with speaking. Furthermore, younger subjects were more likely to report pain and other oral symptoms than older adults (3, 4). Östberg *et al.* (5) observed that young adults and older people who were affected by physical, psychological or social impacts of poor oral health considered the impact to be greater than did middle-aged individuals. On the other hand, Maida *et al.* (6) showed that both the youngest and the oldest

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patients rated their OHRQoL more positively than middle-aged people and suggested that this was due to the mostly good oral health in younger people and that the oldest compared their health with their peers. Reports show that young adults are profoundly concerned about aesthetic aspects (7), and dental aesthetics has also been found to have a significant effect on young adults' OHRQoL (8).

The economic and technological changes in Western society are rapid since recent decades. Many choices are available to young people today but the changes have also led to destabilization of the authority of traditional institutions and to insecurity, as their future may be perceived as more insecure than before. Factors such as a fluctuating and uncertain employment market and the demands for higher education and qualifications have led to a delayed transition into adulthood among young people in Western society of today (9). Furthermore, unemployment is high among young adults (10). The share of young adults in Sweden who neither work, nor study, is increasing, which may result, in the long run, in an impaired financial situation for the individual (11). Östberg *et al.* (12) found that 35% of 19-year-olds did not plan for regular dental visits after the age of 20, when they will be charged for the care. However, self-perceived oral health among young Swedish adults was reported as good in one study (13).

A large number of measures have been developed to estimate the impact of oral health-related quality of life (OHRQoL). Three often used measures are the Oral Health Impact Profile, OHIP (14), translated into Swedish and validated by Larsson *et al.* (15), the Oral Impacts on Daily Performances, OIDP (16), translated into Swedish and validated by Östberg *et al.* (5), and the Oral Health-Related Quality of Life UK, OHRQoL-UK (17), translated by Hakeberg (personal communication). The theoretical starting point for OHIP and OIDP was the WHO document 'Classification of Impairments, Disability and Handicap' which brought about a main focus on negative aspects of oral status while OHRQoL-UK has a broader perspective that also captures positive aspects of oral health. These, as well as other similar measures, were developed for middle-aged or older adults. However, no measure has been especially developed for the age group of young adults (18).

Hence, it is unclear whether young adults consider the content of the OHRQoL instruments to be significant for their oral health and oral health-related quality of life. When using such instruments in dental care and scientific studies, the views of the target group are important and should be considered. The aim of this study was to explore the views of young adults on the relevance of three commonly used measures of OHRQoL.

Methods

Design and informants

For this study, a qualitative approach using interviews for data collection was chosen to describe and explore the views of young adults on three available measures for OHRQoL.

The study was conducted in the south-west of Sweden, and the sampling of informants was made to represent the age cohort 21–29 years. The selection was strategic with reference to age, sex and education. The sample comprised 16 participants (eight 21–25 years; eight 26–30 years). Nine informants were females and seven were males. Half of the informants had completed upper secondary school, and the rest were studying at the local university or had a university degree.

Fourteen informants were regular attendees at a dental clinic (10 at a PDS clinic, four at a private clinic) and two were non-attendees. Staff at the clinics and the interviewer selected patients from the clinics' recall systems in relation to the criteria. The two non-attendees were recruited from the local university.

Interview guide

The interview guide covered areas in the following three OHRQoL measures: the OHIP, OIDP and OHRQoL-UK (14, 16, 17). The questions about the instruments were based on the dimensions in each instrument.

The OHIP contains 49 items with seven dimensions: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability and social handicap (14). Each dimension contains seven items about the frequency of the experienced problems.

The original version of the OIDP contained eight items on daily performances (16), later expanded to nine items in some studies (19). The Swedish version comprises nine items about the frequency of and to what extent the experienced oral problems affect physical, social and psychological performance in daily life (5).

The OHRQoL-UK contains three dimensions: physical, social and psychological aspects of oral health-related quality of life; altogether, 16 items inquiring about positive or negative effects of oral health on quality of life (17).

The main entry questions in the interviews were as follows: 'What is your opinion of the content of the measures'? and 'What did you think about answering the questions'?

Data collection

The interviews were carried out during June to December 2010 by the main author GJ (a registered dental hygienist and public health lecturer). The participants were initially contacted by ordinary mail and asked if they were willing to participate in the study. They were then contacted by phone and an appointment for an interview was arranged with those who were willing to participate. By way of introduction, the participants were asked to read and fill out the two self-reported questionnaires at home (the OHIP-S and the OHRQoL-UK) and bring the filled-out questionnaires to the interview session. The third measure – the OIDP – was responded to orally in connection with the interview. The purpose of asking the participants to respond to the items in the three measures was to introduce them to the measures to be discussed later during

Table 1. **An example of a meaning unit, a condensed meaning unit and a code**

Meaning unit	Condensed meaning unit	Code
It is difficult to answer as I feel I have so few (oral) problems	Difficult to answer due to few oral problems	Few oral problems

the interviews. During the interviews, the participants were encouraged to describe their understanding and interpretation of the content of the three measures. The interviews took place in neutral environments outside dental clinics and lasted between 25 and 50 min. They were audiotaped and transcribed verbatim by the interviewer shortly after the interview.

Data analysis

The data analysis was carried out using qualitative content analysis in accordance with Graneheim and Lundman (20). Content analysis can be qualitative as well as quantitative (21). The characteristic of a qualitative content analysis is that the manifest as well as the latent content is sought. The manifest content can be described as the visible, obvious components in the text, while the latent content deals with relationships between different parts of the manifest content and an interpretation of the underlying meaning of the text (20). This study focused on both the manifest and the latent content. The data were systematically analysed by two persons in the research team (GJ and ALÖ). After transcription of the interviews, the next step was to carefully read through all the interviews several times, line by line, to obtain a sense of the whole and to get an overview of the text. The interviews were then analysed to identify statements that represented each participant's perception of the measures. Statements with the same main content were discussed and reflected upon by the researchers and grouped into meaning units. The meaning units were then condensed and labelled with codes. One example is shown in Table 1. The codes were compared and reflected upon and through comparing them with respect to similarities and dissimilarities they were sorted into categories with shared content, further subdivided into subcategories. These constitute the manifest content. The underlying meaning of the study, the latent content, was discussed and formulated into a theme by the researchers.

Ethics

Information concerning the aim of the study, voluntary participation and confidentiality was given to the participants. Written informed consent was obtained. The Regional Ethical Review Board in Lund (Reg. no. 2009/124) approved the study.

Results

The latent content was formulated into a theme: 'Young adults' own experiences were reflected in their views on OHRQoL measures'. Two main categories with subcategories constituted the manifest content (Fig. 1). The main categories were 'Content appropriateness' and 'Construction of measures'. The quotations chosen to illustrate the results represent a diversity of interview protocols.

Content appropriateness

The experience of their own oral health had an impact on how the informants evaluated the content of the measures. One reason for considering the content or parts of the measures as inappropriate was good self-rated oral health and no experience of severe oral problems. For young adults with good self-rated oral health, oral problems were seen as something that occurs later in life or something that others of the same age might have. The participants could, nevertheless, be anxious about what might happen to their teeth in the future; however, it was stated that 'if you don't have problems, you don't reflect on your mouth at all', or that a possible impact was not even considered until the problem was made obvious by the questions in the measures.

The informants consequently regarded own oral problems as important. Despite the stated lack of oral problems, many informants suffered from a number of physically and psychosocially related oral problems. For instance, worries about caries (former or active) and problems with wisdom teeth were reported.

Physical problems experienced in relation to the measures

Pain in the mouth was experienced quite often by some participants; for instance, shooting pain from gingival recessions,

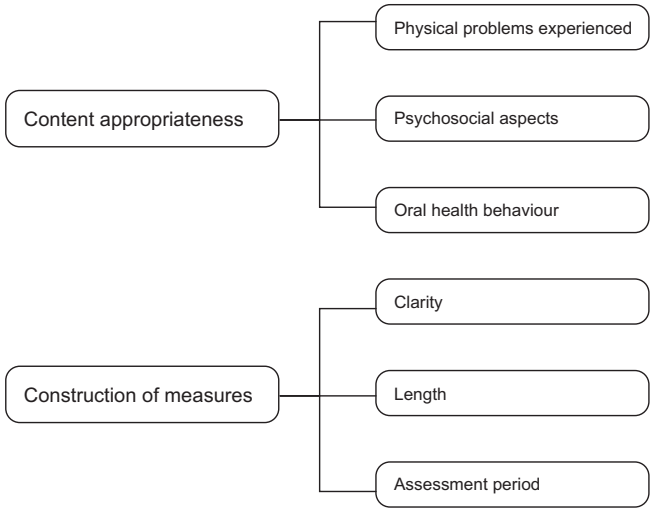

Fig. 1. Themes and categories in the study.

sometimes occurring when eating or brushing the teeth or when using snuff. Pain was also reported from wisdom teeth and when undergoing dental treatment. Aphthous ulcers were reported as being very painful and the source of much suffering. Such aspects made items about pain relevant to the participants. Pain in the mouth was, however, directly inquired about only in the OHIP:

When I have pain in my mouth I don't want to talk or eat because it hurts and affects everything…

Eating problems, such as being unable to feel the taste of the food or experiencing pain during food intake, were thus considered to have an impact on OHRQoL. All three measures (OHIP, OIDP and OHRQoL-UK) contained items inquiring whether oral health problems had entailed blurred speech. Such problems were mentioned merely by one participant. On the other hand, it was described as an important aspect of oral function. These aspects were present in all three measures to a varying extent and degree.

Psychosocial aspects experienced in relation to the measures

Anxiety about having bad breath could influence the well-being of the young adults and was regarded as an obstacle to social relations with others. It was also seen as a possible consequence of snuff use that was completely contrary to the desire of having a fresh mouth. Items concerning bad breath were present in two of the measures, the OHIP and the OHRQoL-UK.

What we haven't talked about at all is bad breath – I am in contact with people a lot, sometimes close contact – so that's something I think about a lot – and I think it (breath) has a great impact…

Aesthetics was regarded as one of the most important aspects of OHRQoL, especially by individuals without other oral problems. Those having experienced caries, shooting pain or other dental problems often seemed to focus on these problems more than on aesthetics. However, oral aesthetics was considered very important in general for young people, not least for their social life:

Yes, appearance – I think so. It has to do with daring to smile and laugh and to feel comfortable with your oral health and your teeth. Since you're young and social life and that is important, I think it makes a difference. So, yes, appearance is definitely important.

Aesthetic disadvantages mentioned were worries about 'yellow teeth', caused, for example by coffee or snuff. Bleaching of the teeth was described as an available but expensive method to get whiter teeth. To have white, straight teeth without too much space between them was considered ideal. Many informants had had orthodontic treatment and the majority was satisfied with the treatment. All three OHRQoL measures contained items concerning aesthetic matters. In the OHIP and the OIDP, these aspects are negatively formulated, while in the OHRQoL-UK, positive as well as negative experiences of aesthetics can be indicated. Consequences of dental traumas – which could also affect the aesthetics of the teeth – were also a concern to some informants.

Oral health-related quality of life was related to self-confidence, according to the informants. Daring to smile without embarrassment and being able to eat with others were considered most important to their social life. Items on socializing with others are present in all three OHRQoL instruments; more detailed in the OHIP and more general in the OIDP and the OHRQoL-UK.

…how much you smile and laugh – if you have nice teeth and very good oral health……...it affects your confidence

Thus, questions about whether you have been upset or irritated with others because of oral health problems were relevant to the target group. Some informants sometimes felt miserable and insecure because of their teeth. For example, pain from aphthae was said to cause irritation with immediate friends and relations. Items about irritation with others in connection with oral problems as described above are found in the OHIP and the OIDP. Worries about perceived poor own oral health could also cause sleeping problems, according to some informants. This was inquired about in all three instruments.

Oral health behaviour in relation to the measures

The OHIP and OIDP ask about oral problems preventing proper oral hygiene, a matter frequently brought up by the participants themselves. The consequences of poor oral hygiene may affect the well-being of young adults:

I haven't always brushed my teeth properly – I've sort of brushed but not perfectly. I've swept over them for a few seconds and then gone to bed…

Thus, it was obvious that the informants were aware of the importance of good oral hygiene; however, they often found it difficult to maintain. Parents and dental staff in clinics and schools were often cited as having influenced oral hygiene habits from an early age.

Oral health habits could be influenced by economic circumstances, according to some participants. Dental care was described as expensive, and sometimes as an obstacle to regular dental visits. Asking about economic matters seems to be important; however, this was not performed to any greater extent in the measures:

I think that your economic situation…has a great impact on your quality of life

To summarize, the informants were familiar with the content of the three OHRQoL measures to a varying degree. Parts of the measures were regarded as appropriate, whereas other parts were more questionable. One commonly expressed view was that the measures mainly captured negative aspects and were too disease-oriented and probably more suitable for

older people, as many items concerned symptoms and problems that many of the participants had no experience of (such as items concerning prostheses and inability to chew). Nevertheless, many of the items seemed to be relevant to the target group. If a particular item was irrelevant to one person, there might be others in his/her age group with such symptoms.

Construction of the measures

In general, the items in all three OHRQoL measures were considered easy to understand. The ability to fill out the self-reported questionnaires varied among the informants but the advantages and disadvantages were almost equally distributed among the three different instruments. The views on the OHIP were mostly that it was clear and easy to fill out. The OHRQoL-UK questionnaire was considered to mirror the positive aspects of the OHRQoL, containing more questions about health, and was also regarded as more suitable for younger individuals. However, it was obvious that the informants had problems with interpreting the meaning of positive aspects of health. Finally, the strength of the OIDP was expressed as being the depth of the items and how problems impact daily life, but a drawback is that it is mainly limited to respondents with oral problems.

Furthermore, one participant suggested digital information and instructions about how to fill out the questionnaires and to use a combination of the OHRQoL-UK and the OIDP measures in digital form.

Clarity

The most important issue for the informants appeared to be the clarity of the items. The majority considered the items in all three measures to be easy to understand and answer; however, some regarded them as complicated and difficult to understand. The OHIP was appreciated and considered easy to understand. It was also regarded as more concrete than the other measures:

> *I think the questions were clear and distinct … to me, the wording was clear and I felt that I could answer clearly, there was no real hesitation (OHIP)*

However, some informants found the OHIP difficult to follow, because it contained too many questions, and they also felt that the wording did not appeal to them.

The OHRQoL-UK measure had to be explained because of the experienced lack of clarity about what was meant by positive aspects. However, some subjects found it too easy to reply 'no impact'. Instead of deciding on the negative or positive impacts, they simply chose the alternative 'no impact':

> *I got a little confused afterwards – I can't really figure out what I mean – this with positive and negative… (OHRQoL-UK)*

The OIDP was considered to be more detailed and more profound than the other measures, as it takes the impact of oral health on a person's daily living into account, and this was regarded as important. The possibility to elaborate further on a specific problem, by breaking it down and asking how often and how much it really impacted on the person's daily life, was considered to be of great value:

> *It is more complete as it has more questions in every question – what can you say – you have all those different… so then you can include more and get more detailed answers*

Another view was that answering the questions in the OIDP made the informants realize the importance of the mouth in social situations. The OIDP was also seen as dealing more with what was outside of the mouth, such as social life and self-confidence, while the content of the OHIP was more focused on what was inside the mouth.

Length

The number of items varies in the three measures, with the OHIP containing the largest number of items (49). The informants did not consider it particularly burdensome to fill out the self-reported questionnaires, even though some of questions required more reflection, which could be demanding. However, the questions could mostly be answered quite fast and were easy to understand.

> *Right, even if there were 49 questions I don't think it was hard work or difficult to get through, I thought it was clear enough, so it was, like, full steam ahead*

On the contrary, some participants considered the questionnaires to be too comprehensive and too time-consuming to fill out. There could be a risk of incorrect answers, resulting in unreflective marking with a cross:

> *Yeah, then I felt sometimes that I'll just put a cross somewhere, because there are so many questions so I'll just cross something… there are so many questions so you just put a cross anywhere…*

The OIDP was considered as short and easy to respond to when orally presented.

Assessment period

The time perspective for the assessment period is different in the three measures. In the OHIP, the respondents are asked to remember 1 year back in time and in the OIDP 6 months, while the items in the OHRQoL-UK concern the current status of the subject's OHRQoL. Remembering what happened as long ago as 1 year was seen as somewhat doubtful. It could also be a problem to remember and think about the assessment period while answering the questions:

> *I think it could be a disadvantage that you have to remember what happened last year – not everybody remembers what last year was like – if they have had pain or problems with pronouncing words or with eating – or think about it when they fill out the forms*

A fixed assessment period was considered by some as making it more difficult to answer the questions in the measures. There was no consensus as to whether 6 months or 1 year was preferable; some even thought that experiences from a person's whole life should be inquired about.

Discussion

In this qualitative study, young adults reflected on three measures of oral health-related quality of life (OHRQoL). The measures were considered as more or less relevant, depending on the participants' own views of QoL and the impact they considered that oral health had on their QoL. Experiences of own oral problems and aspects of special importance to their age group were found to influence their view on the content of the measures. Furthermore, the construction of the measure, with regard to its clarity, length and assessment period, seemed to be of importance.

The people studied in a qualitative study have a life and a culture of their own, and to understand them and the context of which they are a part, we must be able to appreciate and describe their culture. One way to do that might be to uncover their way of communicating and their unique problems (22). Qualitative studies concerning young adults' views on oral health or OHRQoL are lacking. Likewise, young adults' views on existing measures of OHRQoL have been sparsely explored from a qualitative point of view. However, in-depth interviews have been used in the development of some of the available OHRQoL measures; for instance, the OHIP (14, 18).

The trustworthiness of this study is best described using the terms credibility, dependability and transferability (20). It was attempted to ensure trustworthiness of the data collection using a well-established dental hygienist and lecturer in public health to conduct the interviews. The interviewer transcribed the interviews soon after conducting them, to minimize the risk of misunderstanding. Furthermore, the data collection method was chosen with the aim of letting the young adults express freely, using their own words, their views on the three measures, which resulted in variations in the responses. Credibility in the study was reached through selecting participants to provide a good representation of young adults. Sex, age, education and use of dental care varied. Two of the authors read all the transcripts and analysed the text independently, as a first step. Discussions were held and a negotiated consensus completed the final step of the analysis to strengthen the dependability of the study. Quotations chosen to illustrate the findings strengthened the transferability of the study (20). However, the living conditions for young adults differ between and within countries today. In an international perspective, many countries undergo similar economical, technological and social progress (9); therefore, the results might be transferred to most Western countries.

The design of this study aimed to encourage the participants to consider and value the three measures in relation to their own situation and to the age group to which they belonged. It may have been difficult for the participants to discuss the measures immediately after responding to the items, but it was obvious that some had made a great effort to read and understand the content, while others put less effort into the task. This can be seen as a limitation of the study. To prevent this problem, two of the measures (OHIP and OHRQoL-UK) were sent in advance, together with an information letter, before the interview (23).

The life situation for young adults concerning employment and economy varies considerably. Due to Arnett (24), the transition from childhood to adulthood has been increasingly prolonged for young people in recent years. As a result of economic changes and difficulties of finding a job and a place to live on their own, young people stay longer in education and live with their parents longer than before. Their economic situation differs considerably, depending on their employment or educational status. It is characteristic for this age group to have different interests and to establish social settings and leisure activities (9). For this reason, it may be difficult to identify and appraise their priorities; for example, with regard to their oral health, as was shown in this study.

Self-reported oral health during young adulthood has been reported as good, in general (6, 13), but in the current study, oral problems were fairly frequently reported. This is similar to what Cohen-Carneiro *et al.* (4) and Locker and Miller (3) described. As mentioned above, Östberg *et al.* (12) found that young people often did not plan regular dental visits when they will be charged for the care. This may put into question the attitudes of young adults to their self-rated oral health-related quality of life and to the dental service offered.

Aesthetic aspects seemed to be of great importance in this study, in concordance with findings in 20- to 25-year-old Swedes by Stenberg *et al.* (7). Having white, straight teeth were described as being important for socialization; for example, finding new friends and meeting a partner. It seemed that filling out the questionnaires (OHIP and OHRQoL-UK) and answering the questions in the OIDP raised the level of consciousness about oral problems that could occur even among those who had no such experiences. Good oral health and good-looking teeth were also considered to contribute to a better QoL. It is a key issue to empower young people to be aware of oral health, not least considering the decreasing dental care use among young adults (25). One possible way of making young adults pay attention to oral health matters, especially young non-attendees, would be to incorporate questions about OHRQoL in population studies on self-reported general health. Patients being asked a few simple questions about their OHRQoL in connection with dental visits could also potentially raise their awareness of oral health. Answering questions in routine dental care might not, however, result in the same depth of reflection as in a study.

The informants observed that two of the question batteries only reflected negative aspects of health. It might have been an eye-opener to them that oral health could have a broader meaning than merely the absence of symptoms. This would probably have occurred in connection with answering the questions about OHRQoL. Nevertheless, trying to understand the meaning of positive aspects of health and filling out the

OHRQoL-UK without an explanation of the concept seemed to cause problems to the informants. This might reflect the focus on prevention and treating of disease in dentistry and that the definition of oral health traditionally has been 'absence of disease' rather than well-being. Positive health in itself is a somewhat vague concept, without an agreed definition, containing aspects as well-being, life satisfaction and physical health (26). Huppert & Whittington (27) and MacEntee (28) concluded that it was important to measure the positive as well as the negative aspects of well-being in connection with QoL. More attention should be paid to lack of enjoyment and satisfaction, as these experiences may be even worse for health than the presence of negative aspects. In this context, a potential challenge is to increase the knowledge of the determinants of health and quality of life.

Concerning the construction of the measures, only one participant mentioned the possibility to computerize the measures. This is somewhat surprising, as young adults are frequent computer and Internet users. Bhinder *et al.* (29) found that the willingness to complete an online health-related quality-of-life questionnaire (HRQoL) was associated with young age, employment and school enrolment. The demand for personal support when filling out the questionnaires in this study may be due to the young individuals' lack of practice of communicating oral health and life quality matters.

From our findings, it is difficult to conclude that one of the three measures would be the preferred measure for young adults. The length of the measures was not considered as particularly important. It was rather the clarity of the measures that seemed to be the most important issue for the participants. Thus, the choice of instrument should be guided by purpose and circumstances, whether for research or clinical use. Further investigations of young adults' attitudes to their OHRQoL might provide a basis for specific measures for this age group.

Conclusions

The OHIP, OIDP and OHRQoL-UK were evaluated as being equal by the young adults in this study, with regard both to their pros and cons. The clarity of the measures was regarded as the most important factor, while the length and assessment period were of less significance.

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References

1 Locker D. Concepts of oral health, disease and the quality of life. In: Slade GD, ed. *Measuring Oral Health and Quality of Life*. Proceedings of a conference June 13-14, 1996. Chapel Hill: University of North Carolina, Department of Dental Ecology, 1997: 12–21.

2 Inglehart MR, Bagramian RA, editors. *Oral Health Related Quality Of Life*. Chicago: Quintessence Books, 2002 pp. 2.

3 Locker D, Miller Y. Evaluation of subjective oral health status indicators. *J Public Health Dent* 1994; **54**: 167–176.

4 Cohen-Carneiro F, Souza-Santos R, Rebelo MAB. Quality of life related to oral health: contribution from social factors. *Cien Saude Colet* 2011; **16**(suppl. 1): 1007–1015.

5 Östberg AL, Andersson P, Hakeberg M. Cross-cultural adaptation and validation of the oral impacts on daily performances (OIDP) in Swedish. *Swed Dent J* 2008; **32**: 187–195.

6 Maida C, Marcus M, Spolsky W, Wang Y, Liu H. Socio-behavioral predictors of self-reported oral health-related quality of life. *Qual Life Res* 2013;**22**:559–566. Published online: 13 April 2012.

7 Stenberg P, Håkansson J, Åkerman S. Attitudes to dental health care among 20-25 year-old Swedes: results from a questionnaire. *Acta Odontol Scand* 2000; **58**: 102–106.

8 Klages U, Bruckner A, Zenter A. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. *Eur J Orthod* 2004; **26**: 507–514.

9 Hendry LB, Kloep M. *Lifespan Development, Challenges and Risks*. London: Thomson Learning, 2002, pp. 81–97.

10 Statistics Sweden, SCB. Labour Force Surveys: First Quarter 2012, (2012) . Available from: www.scb.se 2012 06 19.

11 Socialstyrelsen. Social Report. The national report on social conditions in Sweden – Summary, (2010). Available from: www.socialstyrelsen.se. 2012.06.13.

12 Östberg AL, Ericsson J, Wennström J, Abrahamsson K. Socio-economic and lifestyle factors in relation to priority of dental care in a Swedish adolescent population. *Swed Dent J* 2010; **34**: 87–94.

13 Lundegren N, Axtelius B, Åkerman S. Self-perceived oral health, oral treatment need and the use of oral health care of the adult population in Skåne, Sweden. *Swed Dent J* 2011; **35**: 89–98.

14 Slade GD, Spencer AJ. Development and evaluation of the Oral Impact Profile. *Community Dent Health* 1994; **11**: 3–11.

15 Larsson P, List T, Lundström A, Marcusson A, Ohrbach R. Reliability and validity of a Swedish version of the oral health impact profile (OHIP-S). *Acta Odontol Scand* 2004; **62**: 147–152.

16 Adulyanon S, Sheiham A. Oral impacts on daily performances. In: *Measuring Oral Health and Quality of Life*. Proceedings of a conference, June 13-14, 1996. Chapel Hill: University of North Carolina, Department of Dental Ecology, 1997:152–159.

17 McGrath C, Bedi R, Gilthorpe M. Oral Health Related Quality of life – views of the public in the United Kingdom. *Community Dent Health* 2000; **17**: 3–7.

18 Johansson G, Söderfeldt B, Wärnberg Gerdin E, Halling A, Axtelius B, Östberg A-L. Measuring oral health from a public health perspective. *Swed Dent J* 2008; **32**: 125–137.

19 Tsakos G, Marcenes W, Sheiham A. Evaluation of a modified version of the index of Oral Impacts On Daily Performances (OIDP) in elderly populations in two European countries. *Gerodontology* 2008; **18**: 121–130.

20 Graneheim UB, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004; **24**: 105–112.

21 Krippendorff K. *Content Analysis. An Introduction to its Methodology*. Thousand Oaks, California, USA: Sage Publications Inc., 2012:87–89.

22 Van Maanen J. Reclaiming qualitative methods for organizational research: a preface. *Adm Sci Q* 1979; **24**: 520–526.

23 Kvale S. *InterViews. An Introduction to Qualitative Research Interviewing*. Thousand Oaks, California, USA: Sage Publications Inc., 1996.
24 Arnett JJ. *Emerging Adulthood: The Winding Road from Late Teens Through the Twenties*. Oxford, England: Oxford University Press, 2004, pp. 3–25.
25 Nordenram G. Dental health. Health in Sweden: The Public Health Report, 2012. Chapter 16. *Scand J Public Health*, 2012; **40**: 42–70.
26 Locker D, Gibson B. The concept of positive health: a review and commentary on its application in oral health research. *Community Dent Oral Epidemiol* 2006; **34**: 161–173.
27 Huppert F, Whittington J. Evidence for the independence of positive and negative well-being: Implications for Quality of life assessment. *Br J Psychiatry* 2003; **8**: 107–122.
28 MacEntee M. Quality of life as an indicator of oral health in older people. *J Am Dent Assoc* 2007;**138** (9 supplement): 47–52.
29 Bhinder S, Chowdhury N, Granton J *et al*. Feasibility of internet-based health-related quality of life data collection in a large patient cohort. *J Med Internet Res* 2010; **12**: e35.