Edentulousness and oral rehabilitation: experiences from the patients’ perspective


The psychological effects of tooth loss in the permanent dentition are relatively unknown. Complete edentulousness is a serious life event in terms of readjustment. The aim of the study was to describe the process patients with deteriorating dental status had gone through before treatment with a fixed prosthesis (Bränemark System, Novum), and to describe what living with a fixed prosthesis means to the patients themselves. In-depth interviews were carried out with 18 patients, and the interviews were transcribed verbatim and analysed in open, axial and selective coding processes according to Grounded Theory. In the analysis, four categories were developed and labelled: ‘alterations in self-image’, ‘becoming a deviating person’, ‘becoming an uncertain person’ and ‘becoming the person I once was’. ‘Alterations in self-image’ was identified as the core category and was related to the other three categories. The core category describes the changes in self-image starting with the subjects’ increasingly worsened dental status, followed by a period of them having to live and cope with a denture and, finally, their living with a fixed prosthesis. The motive power for the decision to undergo treatment with a fixed prosthesis seems to be a desire to restore dental status and also to recapture attractiveness, self-esteem and a positive self-image.

Throughout the world the number of elderly is rapidly increasing, which also leads to an increase of age-related diseases and problems (e.g. edentulousness). Loss of permanent teeth can also happen to younger people owing to accidents, disease or low dental awareness. Yet, psychological effects on tooth loss in the permanent dentition are relatively unknown (1). What is known is that complete edentulousness is a serious life event in terms of readjustment, which can be perceived as more stressful than marriage or retirement (2). In our society, the ideal body image represents youth, beauty, vigour, intactness and health (3). To lose teeth is generally seen as something that happens to elderly people (4). Consequently, the final loss of teeth can represent the final loss of youth and virility (5).

Patient ability to adapt to removable prosthesis (denti-tures) is still a challenge in the prosthetic treatment and there is no difference in ability to adapt to a denture required because of age (6). According to van Waas (7) there is a moderate relationship between treatment dissatisfaction and negative attitudes towards dentures. It is also suggested that implant-supported prostheses have a more positive effect on patients’ well-being than denture replacements (8).

Oral rehabilitation with fixed prosthesis supported by osseointegrated titanium implants (fixtures) ad modum Bränemark has been thoroughly validated for all types of edentulism in clinical multi-center studies over the past 35 yr (9–13). The original protocol was described as a two-stage technique prescribing healing periods of between 3 months and 9 months before functional loading. A further development of the method was initiated in the 1980s, and Bränemark et al. (14) suggested the possibility of completing the treatment in 1 d. Patient benefits include reduced total treatment time, lower cost and fewer clinical visits. However, the patients’ perceptions of what it means to them going through this oral rehabilitation treatment and consequences on quality of life have not yet been explored.

The aim of the present study was to describe the process patients with deteriorating dental status had gone through before treatment with a fixed implant-supported prosthesis. The aim was also to describe and to analyse what living with a fixed dental prosthesis means to quality of life and to gain deeper insight of patients’ experiences and needs regarding dental status and treatment.

Method

Qualitative method

The constant comparative method for grounded theory, described by Glaser & Strauss (15) and advanced by Strauss & Corbin (16) was used in collecting and analysing data. This qualitative method aims at generating concepts, models or theories, grounded in empirical data. The way we used the grounded theory method is a combination of...
versions described by Glaser & Strauss (15) and Strauss & Corbin (16). The guidelines for analysis, open, axial and selective coding, described by Strauss & Corbin (16) have been helpful in analysing our data. The basic principles of grounded theory include concurrent sampling and analysis, constant comparisons, theoretical sensitivity and saturation. Saturation, although somewhat ‘elastic’, is reached when new interviews do not bring additional information into the emerging categories (i.e. when new data fit into the categories already devised) (17). Theoretical sensitivity refers to the researcher’s reflexive way of developing research questions and doing analysis. Grounded theory has its roots in symbolic interactionism, and includes that meaning is constructed and changed within interactions between people (18). Accordingly, perceptions of the world are individual and constantly changed by interactions with it. Criteria for judging the rigour of a grounded theory study include fit, work and relevance, modifiability, parsimony and scope (19). Fit means that the core category is related to the salient social problem under study. A core category fits when it is relevant and works and integrates all other concepts, making the emerging theory dense, saturated and practically applicable. One assumption in qualitative research is that data is generated in interaction between researcher and informant (17). Therefore, the relationship between these two subjects should be focused on (i.e. reflexivity) (20), which contributes to the rigour of the results. Reflexivity includes the researcher identifying preconceptions brought into the study. Multiple researchers might strengthen the design of the study by supplementing and contesting each others statements (21).

Ethical aspects

The study design was supported by the Research Ethical Committee at the University of Göteborg. Requirements concerning informed consent and confidentiality were promised and secured.

Study group

Eighteen informants (eight men and 10 women; mean age 71 yr, range 58–86 yr), participated in the study. The informants were patients at the Brånemark Osseointegration Center, Göteborg, Sweden, and treated according to the Brånemark Novum method (9–13). The patients were strategically selected from the patient register at the clinic on the basis of gender, age, place of residence and date of surgery. The intention with this sampling procedure was to obtain a heterogeneous group. According to grounded theory, a strategic sampling of participants is recommended to maximize the variations of experiences in the group studied. Taken together, the information will give a broad description and understanding of the area studied.

Approach

An open, taped interview, lasting about 1 h, was conducted in a conversational style with each subject in a pleasant quiet room at the Brånemark Centre. In the present study, an interview guide was used and concerned themes such as thoughts and values affecting the orofacial function and dental status, daily living and quality of life before and after the treatment with a fixed prosthesis. Based on these themes, the interviewer (UT) asked relevant follow-up and probing questions. The interviewer was neither a member of the clinical staff nor known to the informants in advance. During the interview, the subjects had the opportunity to raise questions of relevance to them. In-depth interviews require active and engaged involvement of both researcher and informant in responding and clarifying, and elaboration of communication. Data was created within this process and the quality of data was influenced by a trustful relationship between researcher and informant (22). Data collection and analysis were conducted simultaneously (15,16) and continued until new interviews did not provide additional information (i.e. saturation was reached after 18 interviews).

Procedure

After the selection of a presumptive informant from the patient register, each subject was informed about the study by the research team and asked if they were willing to participate in the study. Verbal and written information concerning the aim and the procedure of the study was given to all subjects. After informed consent, the time for a taped interview was scheduled with each individual.

Data analysis

The interviews were transcribed verbatim and analysed in open, axial (theoretical) and selective coding processes (15,16). Open coding means that the substance of the data was caught and segmented into substantive codes, which were labelled concretely e.g. ‘lack of dental awareness earlier in life’ and ‘practical problems’. The process of open coding ended up with clustering substantive codes with similar content into summarizing categories, see Table 1. These categories were given more abstract labels than the substantive codes belonging to it. In the axial (theoretical) coding, each category was further developed and properties or subcategories pertaining to it were identified. Relationships between categories were sought and data were put together into a new whole. In the selective coding, categories and subcategories were saturated by additional information, assessed by new interviews or added by re-coding earlier assessed data. A core category was identified, describing a psychosocial process. This core category was central in the data and could be related to all other categories and subcategories. During the entire process of analysis, ideas, preliminary assumptions and theoretical reflections were written down in notes or ‘memos’ (14). Finally, the interview transcripts were re-contextualized to secure that categories were supported by the raw data.

Results

In the analysis, four categories were developed and labelled ‘alterations in self-image’, ‘becoming a deviating person’, ‘becoming an uncertain person’ and ‘becoming the person I once was’. ‘Alterations in self-image’ was identified as the core category and was related to the three other categories and their subcategories (see Fig. 1). The core category describes changes in self-image, starting with the subjects’ increasingly worsened dental status, followed by a period of living and coping with a denture and, finally, living with a fixed prosthesis. The motive power for the decision to undergo treatment seems to be a desire to restore dental status and also to recapture attractiveness, self-esteem and a positive self-image. Each of the three categories, ‘becoming a deviating person’,
had done everything in their power to improve dental status over the years. The deteriorating dentition was perceived as a violation by the individual and, as such, it was something that could be discussed and vented with friends and family. In contrast, having to wear and cope with a removable denture was hardly ever discussed with friends or family. Dentures were connected with feelings of shame and a variety of practical problems (e.g. as difficulties in eating, talking and laughing). Hence, the self-image of the informants seemed to change from being a deviating person to being an insecure person. After they received a fixed prosthesis their perception, was that self-esteem and security returned, and that they became the persons they once were.

**Becoming a deviating person**

The category ‘becoming a deviating person’ describes the informants’ feelings related to the period when dental status was deteriorating. Having a poor dental status is, according to the informants, a sign of unsocial behaviour and deviating personality (i.e. being different). Bad dental status led to feelings of guilt and shame in addition to periodic physical pain. During this period, subjects in the present study perceived themselves as deviating persons and they also believed that they were regarded as such by people around them. Almost all informants had made considerable efforts, both economical and mental, to improve their dental status over the years. They felt a fear of being recognized as messy and neglected by others because of their dental status. In the interviews, the informants stressed that they had done their utmost to restore dental status during the years. The informants described that there was a lack of dental care in their childhood and, also, a lack of dental awareness. These circumstances, as well as diseases, affected or contributed to their bad dental status. Only a few informants had lost their teeth because of accidents.

**Lack of dental awareness earlier in life** – Generally, dental care has improved over the years, and the yearly dental check-up hardly existed when these informants were young. At that time, knowledge of dental health and the importance of taking good care of the teeth were not common, especially not in rural areas. Most informants described how they had been poorly treated by the dentists in their childhood, resulting in dental fear and their striving to avoid dental appointments. Several informants described that when they had toothache, the dentist simply extracted the tooth. Also, some informants claimed that toothbrushes did not exist at all in their families during childhood, contributing to a poor dental health and dental disease.

‘Well, not that you have neglected … but looking after your teeth has never been made a habit. As kids we never knew how to take care of our teeth. We lived in a small mining village in Västerbotten and didn’t know anything, so when somebody got toothache he had to go to the doctor, who simply pulled it out. That’s the way it was, you see. That was the only way to do it – just pull it out. So one was scared stiff of dentists.’

### Table 1

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
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<tr>
<td>Becoming a deviating person</td>
<td>Lack of dental awareness earlier in life</td>
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<td>Feelings of shame and guilt</td>
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<td>Physical pain</td>
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<td>Becoming an uncertain person</td>
<td>Physical suffering</td>
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<td>Feelings of shame</td>
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<td>Practical problems</td>
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<td>Becoming the person I once was</td>
<td>Social security</td>
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<td></td>
<td>Regaining attraction</td>
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<td>Good dental status</td>
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<td>Feelings of gratitude</td>
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**Fig. 1.** Model describing changes in self-image starting with the subjects’ increasingly worsened dental status, followed by a period of living and coping with a denture and, finally, living with a fixed prosthesis.

‘becoming an uncertain person’ and ‘becoming the person I once was’ was related to a number of subcategories, describing properties and/or dimensions of the category (Table 1). The three categories ‘becoming a deviating person’, ‘becoming an uncertain person’ and ‘becoming the person I once was’ were related to each other in a temporal sequence (Fig. 1), describing the process of change in self-image. Each category and related subcategories are described below and selected quotations from the interviews further illustrate the content of the categories.

**Alterations in self-image**

The core category, ‘alterations in self-image’, describes how the informants have had to live with changes in their self-image, starting during the process of deteriorating dentition, continuing during the period of coping with a removable denture and finally ending after the treatment with a fixed prosthesis. According to the interviews, having deteriorating dentition seems to make the individual being regarded as a deviating person both by themselves and by the social surrounding. In the interviews, all patients strongly pointed out that they really
‘We are 10 boys in the family and I am the youngest. I asked my dad: how the hell do you clean your teeth? We never had a toothbrush at home.’

‘Yes, I had problems with my teeth as a kid when I went to school. We used to go to the local dentist. It was no fun at all. At those times no one took any consideration to our age or anything else. It was horrible. Phew! Sometimes we talked about it with the mates: were you also there? Weren’t you frightened? Yes, one got so scared. We all had a dentist scare. It was just terrible.’

Feelings of shame and guilt – According to the interviews, informants had feelings of guilt and shame because of their bad dental health. All informants claimed that they really had done their utmost to improve their dental status. They worried about being seen by others as messy and being neglected because of their dental health.

‘It might look as if I haven’t looked after my teeth, but in fact I have. So it is really strange.’

‘Mum was very strict with it – you had to brush your teeth every time you had a bite, and I always had a toothbrush with me, wherever I went. Even when I started working, I had a toothbrush with me that I used after every meal. But it didn’t help, did it!’

‘Then I decided to have my teeth pulled out. Not that they were bad…but I used to swell up and that was painful, so my dentist said that the best thing would be to pull them out.’

Physical pain – Having problems with dental health causes a lot of physical pain to the patient. Caries and inflammations in the teeth were perceived as very painful and the informants had spent a lot of time at the dental clinic in order to fix their teeth. The informants described how they were sometimes unable to sleep during nights because of the pain. In addition, getting pain relief meant for most that they had had to pay for repeated emergency visits at dental care clinics. According to the interviews, some informants had also consumed a considerable amount of painkillers, which led to stomach problems.

‘I can tell you that I used to have terrible pains in lower gums …and lots of inflammations.’

‘That is why I lost half of my teeth during military service. My teeth were like rusty tacks. When you get a pain, you don’t brush so carefully, do you? and dentist just love to pick at the son-of-a bitch that aches. Then you keep brushing for a while, until you get a shooting pain in your teeth, when it should be the opposite. So if you ask me, teeth are just pure hell: they must be whined when they first appear, also all your life while you have them, and even when they pull them out.’

Becoming an uncertain person

The category ‘becoming an uncertain person’ describes the informants’ feelings of uncertainty and insecurity when having to cope, psychologically and physically, with a denture. They were always aware of the position of the denture in the oral cavity and developed avoiding strategies in order to ensure that no-one would notice the denture (e.g. keeping the hand in front of the mouth when talking or laughing). In order to manage uncertainty and being in control, they often avoided social interactions, especially when eating. These avoiding strategies contributed to restricted social participation and a change in self-image.

‘It’s a very insecure feeling, when a tooth is not sitting right, and when you talk you keep thinking: can I manage it? So it affects you psychologically. Just this insecure sensation. That something is going to happen. That it will pop out. Very dodgy …’

‘But of course, after so many years, you get used to the problem and behave automatically, and you stop yourself from outbursts of laughter, as there is always a risk that the tooth falls out. But like I say, after so many years you become inventive. No doubt about that.’

The informants also felt that they had a strange object in the mouth, which they never got used or adapted to. The informants described their problems with wearing and coping with a denture as a multifaceted problem, including ‘physical suffering’, ‘feelings of shame’, ‘practical problems’ and ‘decreased attraction’.

Physical suffering – Having to use a denture led to physical suffering such as tenderness and ulcerations in the mouth caused by ill-fitting dentures. Some informants described how they were able to wear the denture for a couple of days only. After these few days, the wounds in the mouth became so bad that the subjects had to remove the denture for some days in order to let the ulcerations heal. This physical suffering was more commonly related to dentures in the lower jaw than in the upper jaw.

‘I couldn’t have this denture – it was too inconvenient (too much trouble). Like I said, it did not fit right, it scraped/ rubbed a lot, so I could only have it outside and not inside. It was very difficult and ached so much that I just couldn’t … chewing was even worse. Eventually it healed but not for long …’

‘When I think about it now, I admit it was terribly difficult. I had terrible pains, you know. I remember once on the way home, the pain just came, sharp as a knife, and I had this sore all week. and it was tough going home.’

Feelings of shame – The informants often withdrew from social interactions because they wanted to avoid being seen as ‘someone wearing a denture’. Having to use a denture was seldom discussed or mentioned to other persons because of feelings of shame: they tried to hide their dentures. The informants also described that they were always scared that the denture would loosen and even fall out of the mouth. Therefore, they avoided eating and drinking together with other people. Informants also avoided uncontrolled laughter in order to make sure that they had absolute control over the denture. These restrictions in social interactions affected their self-image in a negative direction. The following quotes intend to illustrate this:

‘It was like someone was dancing in my mouth. I could not eat and I could hardly talk, and definitely. I could not socialize. I just had to stay at home.’
‘Well, I don’t know if you see what I mean … One is a bit concerned about somebody else seeing it. One feels somewhat misplaced, handicapped. Not human in a way.’
‘It felt like something was wrong in the mouth. Yes, that’s how it felt … particularly when I was eating. I hated to go out – what if something happened? So most often I stayed at home or with friends. This was not part of me. In other words, it did not sit right.’

Practical problems – There were a lot of practical problems connected with wearing dentures, especially in the lower jaw. The most common problem was related to eating and chewing hard food. Some informants also complained about difficulties in talking and pronouncing words.

Practical problems making the denture stay in place with or without denture adhesives were also described. All informants had tried adhesive in order to get a better retention for the denture. However, the saliva and what they drank dissolved the adhesive and made it useless.

Most informants often consulted the dentist in order to get the denture stay better in place, often with a poor result but at a high cost.

‘I bought some stuff to glue the denture back, but it was hopeless – saliva just dissolved the glue, just like that. It didn’t work. No, I had to give up.’

‘But the lower one … it’s always impossible to have them steady. When you talk they get loose, when you take a bite they get stuck – so you don’t have any teeth.’

‘It was hell with this denture – and it did not sit right so I was at my dentists plenty of times and he kept adjusting it.’

Decreased attraction – Most informants wore their dentures day and night and the reason for this was their feelings of decreased attraction without teeth. The importance of feelings of attraction was related both to an eventual partner and to themselves. Most informants were not comfortable with the thought of having to sleep beside their wife/husband without having teeth in their mouth. They also had a feeling of not recognizing themselves without teeth: they were not the person they wanted to be. The informants felt that they became older because of facial changes when not wearing dentures and described feelings of looking ‘un-fresh’ when being toothless.

‘It was not brilliant. Kissing him was embarrassing – what if they fell out. You know, one of those things.’

‘Life has just begun when you are 20. And so this denture. But it happens. You know when you are 20 you don’t think of these things, and suddenly it happens to you. And you can’t stop thinking of it. Jesus! What if she notices that I have a denture. Imagine yourself as a 20-year-old-bloke meeting a young girl with denture…then you start thinking …’

‘I don’t think I slept without them, not once. Except when I was at hospital that time. When I was lying there … how was it … I think I’ve got pains in the lower gums when I was at hospital that’s why I took them out. But not at home. It affects your manhood. You know, when you want to mess around with your missus. It’s no fun without teeth. I never tried though, but I can’t imagine me doing it without teeth. It surely affects your manhood.’

Becoming the person I once was

When the subjects finally were treated with fixed prosthesis ad modum Bränemark Novum they felt that they at last became the persons they once were. They claimed that they looked upon their fixed prosthesis as their own genuine teeth. Their judgements were that the fixed prosthesis felt and functioned physically as their own teeth. Most informants said that they had regained the self-esteem they once had and that their psychological, physical and social wellbeing was considerably improved. The following quotes illustrate this.

‘I must admit that I wouldn’t be feeling this great if I had not done it. I wouldn’t have recovered the same way. I doubt it. The whole life quality has changed enormously and I’ve got back my self-assurance. Thanks to it I am back to normal.’

‘Also socially you feel reborn – you are a normal person again.’

In the interviews, the informants described themes concerning ‘social security’, ‘regained attraction’, ‘good dental status’ and ‘feelings of gratitude’.

Social security – Having a fixed prosthesis includes the subjects feeling secure when interacting with other people. They were able to eat and drink as they liked, without fear of losing their denture. Furthermore, it became possible to speak freely without being afraid that the prosthesis would fall out of the mouth.

‘My social life is now in order – and that’s something! It wouldn’t have worked with my old loose denture. I would never dare approach other people.’

‘And then the big problem was when one went out with customers and stayed over somewhere in Norway, Denmark or Finland and went out for a meal. The lads always wanted steaks. I didn’t dare and instead said that I preferred fish or something. I hardly went with them if it was steak. So … but now there’s no problem. I can be with them and eat steaks too!’

Regained attraction – According to the informants, it is important to feel attractive. Since wearing a fixed prosthesis was perceived as equal to permanent teeth, the subjects in the study said that they have regained self-esteem. Almost all of the informants claimed that it was more important than ever to look good and attractive when getting older. They argued that signs of ageing, such as wrinkles, led to loss of the beauty of the youth. Therefore, security and comfort concerning one’s teeth was important and actually a compensation for other signs of normal ageing.

‘Obviously, when you get older, you get a lot of wrinkles and such. That I have accepted. But with teeth – it’s a good feeling just to feel secure. Not to have a loose gum. Appearances mean more when one is older…we’ve lost our younger looks…so…yes, it’s really important!’

Good dental status – Having a fixed prosthesis gave the informants feelings of good dental status for the first time since their dental problems started. To escape from toothache or dentures that did not work was a relief to
all the subjects. They did not have to visit their dentist as often as they did before and they were pain-free, often for the first time in many years. The informants claimed that they did not think about their fixed prosthesis as an artificial substitute for teeth but as their own genuine teeth.

'I prefer this to my own. If I could press a button and have all my own completely fresh. Jesus! I'd never do it. Then I'd get trouble again in 10 years. Never!'

Feelings of gratitude – The subjects in the present study felt extremely grateful for the new technique that made it possible for them to have fixed teeth. Treatment with fixed implant-supported prosthesis was seen as an excellent opportunity that had not existed earlier. Most informants were unhappy that this treatment had not been possible earlier in their lives. They were also grateful for the knowledge and the security provided by the staff at the clinic. They highly appreciated the opportunity to be treated in only one day. The consequence of this rapid treatment was that they avoided being toothless for a longer period. The years they had lived with deteriorating dental status and were wearing their old dentures were perceived as lost or wasted years and to still be toothless would have been devastating to their self-image, social life and feelings of attraction. The time aspect of a short and intensive treatment was the main reason for the patients in the study when choosing the Brånemark Novum method.

'No, but it was completely unbelievable. If it was necessary, I would do the same thing again. The lads I completely trusted. One saw from the beginning that they were very careful and made no mistakes. It would be done to perfection. One feels calm and relaxed.'

'They are wonderful here. I really like the girls in there. They’re so cute. Really fine. and when one arrives there are always big hugs. They’re wonderful.’

'The mouth is one of the body’s important parts. Definitely. Not the most important but important. Both for one’s appearance and functionality. So with Brånemark’s teeth it is a blessing that they’ve started.’

Discussion

Alterations in self-image (i.e. living with a psychologically changed image of oneself) was central to having deteriorating dental status ending with treatment with a fixed dental prosthesis. There is a general need for validation and valuation for all human beings, the need being either innate or learned (23). In interactions with the social environment, the image of oneself will be formed and validated. The experiences of the informants in the present study were that validation and valuation by others were influenced by both appearance and dental status. During the periods of deteriorating dental status, and when they wore a removable prosthesis, they perceived that they, more or less, lacked positive appreciation and validation from people around them. This contributed to their uncertainty and feelings of deviating from normality. Their image of themselves changed and they felt as deviating and uncertain persons. Because of this, there was a discrepancy between the person the informant once was and wished to be again, and the person they were perceived as by others. However, their feelings of security and attractiveness were regained when they got a fixed prosthesis and, thereby, their image of themselves changed, and they became the persons they perceived they once were. This process of socio-psychological change related to oral health, emerging in interview data of persons with a fixed implant-supported prosthesis and a history of deteriorating dental status, is the main finding from the present study (see Fig. 1). Our study emphasizes the importance for dentists to identify patients with subjective negative psychological, social or functional effects of their edentulousness or removable dentures and to consider fixed prosthesis as an alternative.

The design of a qualitative study includes control of quality in all phases and internal logic, (i.e. harmony between research question, research approach, the nature of the phenomena, data collection and analysis) (24). Our study is based on an extensive amount of data (about 530 pp) from a heterogeneous group, strategically selected from the patient register at the Brånemark Osseointegrated Center, Göteborg, Sweden, according to gender, age, place of birth and date of surgery. Data collection continued until new interviews did not provide additional information, (i.e. saturation was reached). The process of such a sampling procedure is closely related to internal validity (21). The aim of our study was to describe the process patients with deteriorating dental status had gone through before treatment with a fixed implant supported prosthesis. The emerging categories, describing alterations in self-image, were all grounded in data and the quotations given are intended to show the trustworthiness of our interpretations. External validity concerns transferability of the result to a new context (21). We argue that our results could be transferable to groups with similar characteristics to our study group.

Throughout the industrialized world, the number of elderly is rapidly increasing. Oral health problems are significant in this ageing group. According to Davis and coworkers (25), 45% of edentulous individuals feel that edentulousness has a major impact and leads to decreasing confidence, less ability to carry out everyday activities and difficulties in accepting facial changes caused by tooth loss, which is also supported by the present results. Hence, the impact of edentulousness in individuals should not be underestimated. However, it is difficult to discuss this taboo subject among edentulous individuals (4), which was also obvious in the present study. To be edentulous was strongly connected with feelings of shame and guilt and something the informants did not discuss with others. Yet, the informants in the present study had a background of generally poor dental knowledge. One can assume that, in the future, dental knowledge can probably increase considerably because of development in dental care and, hence, having a poor dental status will be even more related to feelings of guilt and shame.
Having to wear a removable prosthesis always demands emotional and functional adjustment (4). Individuals wearing a removable prosthesis have been reported to have significant problems with social and emotional aspects of their life situation and to be more depressed than individuals with natural teeth (26). Blomberg & Lindqvist (1) found that 44% of patients wearing dentures perceived that the dentures had led to a major deterioration in their way of life. The most recent epidemiological surveys in the Nordic countries show that there are large proportions of the population (aged 65–75 yr) that have complete edentulousness: Denmark 40% (27), Iceland 68% (28), Norway 60% (29) and Sweden 18% (30). However, edentulousness is decreasing owing to improved oral health and dental awareness (31). The large majority of elderly now wish to restore and conserve their teeth whereas, previously, teeth were extracted when problems developed (32).

Having an attractive appearance has become more and more important and, according to Ehrnulf (33) the beautiful and slender individuals have the biggest chance of success both in private and professional life. Earlier research has shown that appearance is an important factor in the treatment of others (34,35). A recent study (36) showed that young people's conception is that attractiveness and having a 'nice' appearance is important for young people only. However, the present study showed that elderly people find attractiveness and a 'nice' appearance as important as the adolescents. According to the interviews, normal ageing, as such, with decreased physical functioning and attractiveness, could be 'compensated for' by the security with a fixed dental prosthesis. Personal security and perceived increased attractiveness also seem to contribute to their expectations of ageing with dignity.

According to McGrath & Bedi (37) there are gender differences in the social impact of oral health on perceived quality of life. Poor oral health has a greater impact on quality of life in women than in men. Tiggeman & Lynch (38) showed that women's dissatisfaction with their bodies is stable over their life span, from adolescence to old age. However, in a study by Hurd (39), elderly women reported that being healthy and having a good vigour was more important than having a 'nice' appearance. Further, the women perceived that deteriorating oral health caused more embarrassment in social life than did the men. In the present study, the women expressed more explicitly the impact of oral health on their feelings of attractiveness, whereas the men were somewhat more functionally oriented when they were talking about oral health issues and often stressed the importance of being able to chew and eat whatever they wanted to. Although explicitly stressing the oral function, attractiveness was seen by the men as important for their feelings of manliness, virility and potency.

In the present study, the informants claimed that the fixed prosthesis was perceived as an integrated part of the body. This has also been reported in previous studies (4,40). Hence, it should be seen as a challenge for dentists, and an economic challenge for the society, to offer fixed prosthesis to patients with a negative outcome for removable dentures in order to improve quality of life for these patients.

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