Quality of life as an indicator of oral health in older people

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ABSTRACT

Background. Quality of life is dynamic, fluctuating and resilent; it has both positive and negative attributes and is influenced by personal and social expectations. However, it is difficult to measure the experience in a way that is clinically relevant and useful.

Methods. The author examined the literature relating to the assessment and measurement of quality of life as influenced by oral health.

Results. It is difficult to interpret the clinical relevance of measurements from questionnaires or structured interviews that use predetermined response options to indicate health-related quality of life. In contrast, open-ended interviews and focus groups have helped to clarify the mouth's effect on the quality of life of older people. They also have helped to construct a new model of oral health that is consistent with current concepts of aging and disability.

Clinical Implications. The new model of oral health offers the possibility of developing interviews and questionnaires using language that has the scope and sensitivity needed to reveal the positive strategies that older people use to manage their oral health and quality of life.

Key Words. Research; aging; oral health; outcome assessment; quality of care.

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The biomedical model of disease dominates our professional education to direct how we examine, measure and interpret oral health, and it focuses our attention on the physical structures and processes associated with the mouth. However, some clinicians and researchers are uneasy with this narrow focus, partly because it can exaggerate the need for treatment. For example, researchers[1,2] exaggerated by between 30 and 90 percent estimates of the need and time required to treat oral health–related problems among frail elderly people in residential care when they ignored patients' propensity to benefit from treatment.

In addition, the biomedical model provides a limited explanation of what causes or promotes disease. For example, the theory regarding the cause of periodontal disease has moved from germ theory to molecular and genetic biology, and from a

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nonspecific to a specific plaque hypothesis. However, it is more likely that the cause—in contrast to the pathogenesis of this and many other chronic diseases of the mouth—will surface at the population and societal level within the realms of economics, sociocultural structure and behavior.[1]

The promotion of oral health might benefit more from knowing why people choose to neglect their oral hygiene, or binge on sweet snacks, than it does from an explanation of how DNA polymorphisms influence susceptibility to periodontal disease. Similarly, reconsideration of what constitutes a minimal threshold of physical function—prompted by an increased awareness of the propensity to seek and tolerate treatment, as well as to benefit from it—has led dental professionals to promote the "shortened dental arch" as a healthy alternative to prosthodontic replacement of missing molars, at least among older people.[2-6]

The propensity for treatment is influenced by the physical, psychological and social context in which treatment is considered, along with a person's desire for treatment and ability to benefit from it.[7] Several practical observations support this concept. We find, for example, that elderly people maintain, for as long as possible, patterns of oral care established early in life.[8] They seek treatment for problems they believe to be serious and are likely to be treated successfully[9]; moreover, they are more accepting of treatment that they believe will benefit their self-image and social interaction than they are of treatment that enhances their physical function.[10,11] This leads us to consider quality of life as an experience that warrants our attention when assessing treatment needs and outcomes, as well as a motivator of behavioral change to enhance the oral health of older adults.

EXPERIENCING QUALITY OF LIFE

The terms "quality of life" and "health-related quality of life" defy simple definitions, although they are used widely in various contexts associated loosely with the impact of disease and health on personal experiences. Sometimes they are associated with subjective well-being, happiness, satisfaction, goodness and the like.[12,13] Similarly, dental professionals have used the term "oral health–related quality of life" to describe the impact of oral health on a patient's personal experiences. Gregory and colleagues[14] defined the term as "the cyclical and self-renewing interaction between the relevance and impact of oral health in everyday life." Clearly, this is a complicated psychosocial interaction.

Relationships between oral function, health perceptions and oral health–related quality of life have been portrayed, for the most part, as negative experiences.[15] However, quality of life is a dynamic and subjective blend of biological and psychosocial experiences influenced by our personal and sociocultural environments.[16,17] Quality of life seems to be influenced by the extent to which we feel capable of participating in activities that meet our needs and expectations. These activities, in turn, are influenced by our environment, economic status, responsibilities, biological constitution[12,18] and, of course, time.[14,16] Essentially, when our oral health is good, we feel that we can comfortably meet our expectations, but when it is poor, we feel frustrated and sense that our expectations are being compromised.[19]

Dolan[20] defined oral health broadly as "a comfortable and functional dentition which allows individuals to continue in their desired social role." Similarly, the Canadian Dental Association defines oral health as "a state of the oral and related tissues and structures that contributes positively to physical, mental and social well-being and enjoyment of life's possibilities, by allowing the individual to speak, eat and socialize unhindered by pain, discomfort or embarrassment."[21] Clearly, there is an interaction between how we experience quality of life and how we perceive our oral health. However, central to our understanding and interpretation of this psychosocial intricacy is the question of whether we can measure quality of life and the impact that oral health has on it.

MEASURING QUALITY OF LIFE

About 17 dental questionnaires or structured interviews (sometimes referred to as "sociodental indicators") have been developed. (Details of the instruments are found in Brondani and MacEntee.[22]) These instruments have been developed, directly or indirectly, to measure the impact of oral health on quality-of-life experiences.[22] Clinicians and researchers are pointing to these experiences as possible indicators of how a person's self-assessed quality of life is influenced

ABBREVIATION KEY. WHO: World Health Organization.

by different treatments in clinical practice or in a clinical trial, or by different programs in a health care system.[23] However, quality of life is influenced by a complicated array of phenomena with positive and negative attributes that probably defy simple explanations, assessments or measurements. Certainly, the phenomena are much more than experiences of ill health, despite the orientation toward dysfunction and disease that dominates many of the questionnaires that assess oral health–related quality of life.[22,24]

Some researchers have questioned the appropriateness of questionnaires or indicators relating to quality of life when developed only from professional notions of normality without the direct input or advice from healthy people.[12,25,26] Consequently, according to Hunt,[12] "a good 'quality of life' automatically becomes equated with optimal functioning defined within narrow confines of doubtful relevance to patients." In addition, Bowling[25] explained that "few indicators attempt to measure patients' perceptions of improvement or satisfaction with level of performance; yet it is this element which is largely responsible for predicting whether individuals seek care, accept treatment and consider themselves to be well and 'recovered.' "

Controversy persists as to whether quality of life, as reflected by the broad and multidimensional experiences of negative and positive health—or illness and wellness—can be measured sensitively, reliably or meaningfully.[12,13,22] In general, the predictive validity of the oral health–related indicators is untested. Good evidence exists that the association is weak between the clinical status of older patients and their responses to oral health–related questionnaires.[27,28] This observation, which casts doubt on the concurrent validity of the questionnaires, is compounded by the discordance between global self-ratings of oral health and the satisfaction or dissatisfaction with oral health that emerges on further questioning of older patients. Moreover, the discordance seems to increase with age.[28]

Some investigators have raised similar concerns about the content and construct validity of many dental indicators, because of the way in which they have been developed and the theory upon which they are based.[15,22] Locker and Gibson[29] questioned the merits of "positive health" as a practical concept in applied oral health research; they found that it lacks a precise definition and empirical support, and it poses measurement problems. These authors concluded, nevertheless, that "the notion of positive health, irrespective of its merits and public policy implications, provides a context for methodological and theoretical debate that can only serve to enrich theory and practice with respect to measures of health and quality of life and therapeutic interventions at the individual and population level."

THEORETICAL FOUNDATIONS AND PRACTICAL APPLICATIONS IN DENTISTRY

About 30 years ago, Cohen and Jago[30] called for a "sociodental indicator" or questionnaire that was capable of quantifying the impact of oral disorders from a psychosocial perspective, rather than from a biological perspective. This prompted other investigators to use role theory as a conceptual foundation for developing the questionnaire.[24,31,32] Role theory portrays health, or rather the absence of health, as a negative experience, and illness is portrayed as a social deviance that exempts people from their functional role in society.[33] Locker[34] moved the development of sociodental indicators further by offering a model of oral health derived from the World Health Organization's (WHO) International Classification of Impairments, Disabilities and Handicaps[35] that was rooted firmly in role theory and the language of disablement (such as "impairment" and "handicap").[15] The result was a flurry of activity spawning at least 17 dental questionnaires, each with a specific number and range of questions that address mainly the negative impact of disease and ill health.[22,24]

Nonetheless, no consensus exists regarding how health and ill health interact with quality of life. Moreover, no consensus exists regarding the most suitable questions for measuring the interactions or, indeed, on how to interpret the clinical significance of the scores they produce.[12,13,36,37] Indeed, the number and range of psychosocial measures of oral health currently available suggest difficulty with the theoretical foundation and scope of the measures. However, this might reflect the practical possibility that each questionnaire is designed for a particular purpose, because one questionnaire cannot possibly cover the complete range of psychosocial experiences. Also, researchers are concerned about the fact that so many questionnaires project oral impairment (that is, the physical abnormality) and disability (that is, the physical, psychological or social impact of the impairment) strictly as nega-

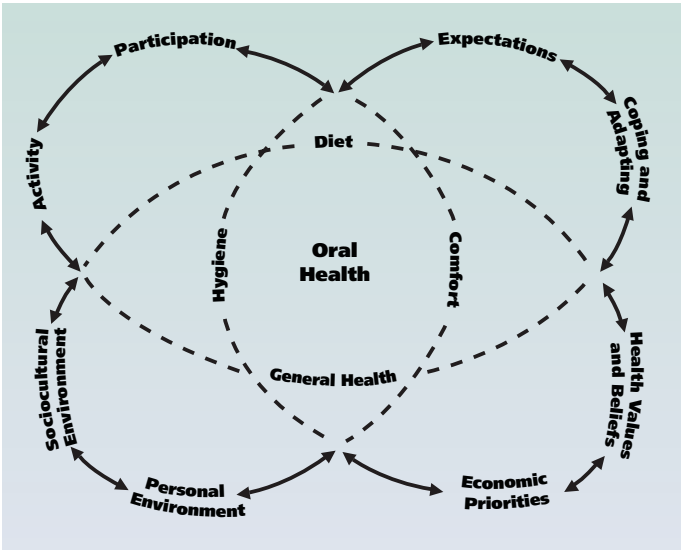

Figure. A model of oral health (adapted with permission of Blackwell Publishing from Brondani and colleagues[59]).

tive experiences, which clearly is not the case for everyone.[38-40]

The negative concepts and language of the questionnaires contrast with current perspectives on impairment and disability.[39] They also fail to accommodate the positive puzzle of disability, such as the "disability paradox" of the quadriplegic person who reports a remarkably high quality of life[41] or of the writer with a severe craniofacial disfigurement who feels fortunate because others are less fortunate.[40]

On the other hand, concerns about the negative focus of the questions are tempered pragmatically by the view "that it is more important to know about the sick than it is to know about the healthy, particularly when health care resources are limited."[27] Several indicators are exceptions to this predominantly negative focus, such as the Geriatric Oral Health Assessment Index,[42] the Dental Impact Profile,[43] the Oral Health Quality of Life Inventory[44] and the Oral Health Quality of Life United Kingdom questionnaire.[45] These indicators offer opportunities for respondents to indicate that oral health has been a positive experience. For example, the Geriatric Oral Health Assessment Index[42] asks, "How often were you pleased with the looks of your teeth and gums, or denture?" Unfortunately, the mix of positive and negative questions in this instrument has raised other unresolved issues regarding scoring and interpreting the scores.[29]

Despite their widespread use in clinical trials and health care evaluations, we do not know whether a structured set of questions can probe with completeness and practical relevance the intricate and dynamic experiences of oral health and related quality of life.

INTERPRETING ORAL-HEALTH–RELATED QUALITY OF LIFE

Researchers have adopted theories and assessment methods other than the ill health role theory and structured questionnaires for exploring and interpreting the impact of oral health on quality of life.[14,46-49] Self-efficacy theory, for example, offers an explanation for pain tolerance[50] and the behavior of patients as it relates to prevention of periodontal disease.[51,52] Davis[53] suggested that compliance theory, social structure theory and labeling theory explain how people address the social stigma of oral disorders. Stolar and colleagues[54] found that Antonovosky's concept of social coherence can help explain how older people make sense of their oral health and quality of life.

Open-ended interviews following the traditions of qualitative research[55] and similar to the informal but systematic interview techniques used by clinicians offer rigorous methods and trustworthy opportunities, when transcribed and analyzed thematically, to elicit and interpret a wide range of detailed and sometimes unexpected information about human experiences and beliefs.[39,56,57] Using this research method, Fiske and colleagues[11] discovered how denture wearers suffered from depression and social isolation as a consequence of tooth loss.

My colleagues and I[19,54] used a similar approach to analyze interviews to explore the significance that oral health had in the lives of relatively healthy dentulous and edentulous elderly people. I combined the information from these interviews with the current concepts on health and disability advocated by the WHO's International Classification of Function[58] to construct a new model of oral health.[15] Brondani and colleagues[59] used additional information gathered from several focus groups of elderly people to develop the model further (Figure). The result is a model of oral health composed of four major themes: comfort, general health, hygiene and diet. These themes affect people's lives both socially and personally.

The model draws attention to the interaction between the major themes, as well as the overarching influence of personal and social environments on oral health. It illustrates the potential

for a person to adapt to, and cope with, impairment and disability, and the influence that the different constituents (such as diet, hygiene) have on a person's activities. The new model is based directly on the experiences of relatively healthy elderly people, as recommended by Bowling[25] and Hunt.[12] It accommodates current theories of aging and disability, with an emphasis on physical, psychological and social adaptation to maintain a sense of coherence[49] and a positive response to disability and ill health despite their tendency to detract from quality of life in old age.[58,60,61]

The model offers a conceptual framework for studies and possibly for questionnaires to explore how people adapt to, and cope with, oral ill health and impairment to maintain a positive perspective on life. More specifically, the model should help in the development of research methods that will explain the disability paradox of why tooth loss and other oral impairments are severely debilitating for some people and merely an indisposition for others.[53]

Finally, responses to a questionnaire focused essentially on wellness or positive health should add constructively to the information already accumulated about the negative impact of oral ill health. These responses also should help explain the different perspectives of elderly people and dental professionals regarding the need for oral care.[2,28]

CONCLUSIONS

Oral impairment and disability are inevitable features of old age, but they do not necessarily have a negative impact on one's quality of life. Aging usually proceeds as an unpredictable series of fluctuating experiences, some for the worse and some for the better. Through them, people adapt to cope with adversity and maintain an overall sense of coherence. Typically, people assimilate what is at hand to compensate for expectations and perceptions of loss, and they modify activities and expectations to achieve an acceptable quality of life.

Numerous questionnaires and structured interviews have been developed to document and measure the negative effect of oral ill health, and some also seek information regarding the positive attributes of oral health. However, it is difficult to interpret the measurements in a practical and clinically useful way. As an alternative to the questionnaires and interviews with predetermined response options, open-ended interviews and focus groups with elderly people have led to practical insights regarding the significance of the mouth in old age, and they have provided an empirical foundation for a new model of oral health that is in keeping with current concepts of aging and disability.

As a complement to the existing questionnaires that assess the impact of oral ill health on quality of life, the new model offers a conceptual foundation derived directly from older people for the design of studies and questionnaires that have the scope and sensitivity of language that will enable us to identify the positive strategies people adopt to manage their oral health and quality of life as they age. ■

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