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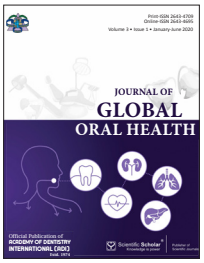

Review Article

What are "health" and "oral health"?

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ABSTRACT

Health and oral health for individuals and societies are a worthy goal, but few consider the meanings of "health" and "oral health." Definitions may seem inconsequential, and no definitions can fully capture the complexities of health and oral health, but they serve as guidelines for care and direction markers of health policy. The 1946 World Health Organization definition of health as "… complete physical, mental, and social well-being and not merely the absence of disease or infirmity" led to a greater acceptance by many that "health" extends beyond the prevention and treatment of disease, and that an individual's subjective, self-determined health status based on their own experiences, values, and priorities is as valid as a clinician's objective view based on clinical indicators. However, this broad, holistic view of health was not accepted as readily in dentistry. Definitions of oral health have changed substantially in recent years, but their development continues to lag behind definitions for general health.

Keywords: Health, Oral health, History of dentistry, Public health dentistry

INTRODUCTION

Precise definitions aid understanding and communication, planning, and care. Only when health concepts are precisely defined, can attempts be made to measure them, and interventions to promote health be designed, implemented, and properly evaluated. Galileo is quoted as saying "Count what is countable, measure what is measurable, and what is not measurable, make measurable."[1] and much later Lord Kelvin reputedly agreed: "If it exists, measure it."[2] However, despite considerable research into disease, "There remains today no widespread agreement on what to measure or how to measure health in the community."[3] The quandary for health systems, health professionals, and researchers is that disease, while sometimes also difficult to define,[4] is still easier to observe, describe, quantify, analyze, and interpret than health and well-being. Clinicians and researchers have, therefore, naturally gravitated toward describing health in negative terms – the presence and severity of disease and disability, and their impacts on individuals – inevitably leading to self-reinforcing sequelae.

In the absence of definitive measures, concepts of health are many and varied. These concepts and the "... physical, mental, social, spiritual, individual, environmental, functional, and other dimensions" related to them and assessed both subjectively and objectively are described more fully elsewhere.[5] This paper considers only the definitions of general and oral health derived from these concepts. It describes the significant changes in historical definitions of general and oral health over time, the reasons for and implications of these changes, and a possible future direction for definitions of oral health. Definitions of general health have been split into two

sections, before and after the landmark 1946 World Health Organization (WHO) definition. Definitions of oral health are listed together. All definitions within each group are listed chronologically in the Appendix.

HISTORICAL DEFINITIONS OF HEALTH

As with other social science constructs such as class, culture, intelligence, and happiness, concepts of health are imprecise, often used loosely, and difficult to define, although many have attempted to do so. The Greek soldier statesman Pericles defined health ~400 BCE as "… moral, mental, and physical well-being which enables a man to face any crisis in life with the utmost facility and grace."[6] A few centuries later, physician Olympicus defined it more simply and intuitively as "… the absence of disease."[7] For the ancient Greeks, physical, mental, and emotional health represented a balance of forces or humors or fluids within the body and the equilibrium between internal and external environments; disease is an imbalance of the same. Nature was the primary healer, although physicians could assist this process and even prevent illness through advice on diet, exercise, recreation, and contemplation. Health and disease could also be determined by the Gods, who may or may not respond to offerings and appeasements. The Romans adopted many of their health beliefs from the Greeks, and poet Juvenal prayed for "... mens sana in corpore sano," a sane mind in a sound body.[8] Indian Ayurvedic medicine is based on the balance between three primary humors, and Traditional Chinese Medicine believes that a finely tuned balance between yin and yang forces ensures health. For many Indigenous peoples around the world, illness results from social and spiritual dysfunction, and the concept of an individual's health is inextricably linked to the health of their family, ancestors, society, lands, and spirit world.

Following Olympicus, and up to the mid-20th century, "health" has been defined dozens of times (Appendix). With subtle differences, most definitions prioritized disease, physical fitness, function and bodily integrity, or the ability to work and achieve. Healthcare over most of human history has involved an ongoing and largely unsuccessful battle against a wide range of diseases and disabilities and premature death. Middle ages medicine relied more on religion and astrology than science,[9] and the 18th century French writer Voltaire cynically held that "The art of medicine is to keep the patient entertained while nature effects a cure."[10] Only in more recent times have social reform measures and advances in science, medical knowledge, and public health led to control or prevention or satisfactory treatment of most diseases, and people reasonably anticipating long and healthy lives with opportunities for relaxation and enjoyment.[11] With these changes, the concept of positive health emerged, and a smaller number of definitions began to consider an extended concept of health based on enjoyment of life, and the meeting of personal and social goals.

WHO AND MODERN DEFINITIONS OF HEALTH

At the 1946 International Health Conference in New York, member states developed a constitution for the newly formed WHO. Its preamble channeled Pericles in defining health holistically and positively as "… complete physical, mental and social well-being and not merely the absence of disease or infirmity."[12] The definition was drafted by French doctor Raymond Gautier from the predecessor League of Nations Health Organization and derived from earlier writings by Swiss medical historian Henry Sigerist. The term "well-being" was taken from the International Labour Organization's 1944 Declaration of Philadelphia and its "… promotion of health, education, and well-being."[13]

The WHO constitution was formally adopted in 1948, and the definition has remained unchanged to the present day. In the aftermath of the catastrophic World War II, the constitution was also a political statement, written by idealists who recognized the social determinants of health and disease and the importance of individual well-being. They urged government social and health reform measures to promote international peace and security and "… make mankind's life more livable."[14] The emphasis by the WHO on healthy societies, not just healthy individuals, contributed to the development of generous public health systems in the UK, Canada, and other countries. Decades later, the influential Declaration of Alma-Ata[15] and Ottawa Charter for Health Promotion[16] added that peace, shelter, education, food, income and economic development, a stable ecosystem, sustainable resources, social justice, and equity as fundamental conditions and resources for health. Under this sweeping view, few aspects of life are not health-related.

The acceptance of a model and definition of health as being more than the absence of disease and disability involved a slow paradigm shift from a sole focus on the biomedical and pathological to a greater emphasis on the psychosocial. In one of the most highly cited of all medical papers, Engel in 1977 criticized medicine's dogmatic adherence to the biomedical model, claiming that it "… leaves no room within its framework for the social, psychological, and behavioral dimensions of illness."[17]

The WHO definition of health is unapologetically aspirational and has been challenged many times as "... a pious expression of wooly idealism,"[11] "... simply a bad one,"[18] "... vacuous,"[19] "... well-meaning rhetoric... totally meaningless,"[4] "... wildly utopian" and "... more realistic for a bovine than a human state of existence,"[20] "... famously hyperbolic,"[21] "... an ironic icon of a bygone age,"[22] and "Noble indeed, but too idealistic to be of much practical value."[23] While superficially appealing, even the WHO conceded that its definition "... does not easily lend itself to objective measurement,"[24] and "complete" well-being may exist only if one's expectations from life are

extremely low.[18] Under the WHO definition, a person with even the mildest disability or limitation is automatically labeled as unhealthy, even if that limitation is of little concern and has minimal impact on daily life. Others maintain that the WHO definition measures happiness, not health,[25] and leaves little conceptual space for health-related quality of life (HRQoL),[26] although one might equally contend that happiness, well-being, and HRQoL (and by implication oral HRQoL [OHRQoL]) are very closely related to health, even if arguably separate constructs.[27] Even if conceptually valid, the WHO definition has little direct operational value, since it ignores the relative impacts and varying severities of different diseases and impairments, their prevalence in societies, the relative importance of physical, mental, and social health and the relationships between very different concepts, the difficulties in measuring these concepts, and that concepts of health differ within and between cultures.[8] However, despite valid criticisms and many proposed alternatives, the WHO definition of health is still cited widely 76 years after its publication, suggesting that it has both appeal and merit.

Almost all definitions of health post-1946 that extend to the present day (Appendix) "highlight the well-being, or spiritual, and components of health"? Most have been written by non-health professionals, and in what would have been inconceivable in past eras, disease and disability are barely mentioned. These normative views accept that health and well-being are positive, not neutral states. Essential to these positive states is the striving for and attainment of a wide range of value-based goals driven by each individual's personal and socioeconomic circumstances.

The opposite naturalist or species-typical view that health represents solely the absence of disease and disability and is value-free is still promoted in the medical literature.[28] Callahan defined health simply as "physical well-being," arguing that it is not the role of medicine to cure the world's social, political, and cultural problems.[18] Under this much narrower, and now not widely accepted view, a "health professional" might be better described as a "disease professional."

DEFINITIONS OF ORAL HEALTH

As with general health, dozens of definitions of oral and dental health have been proposed (Appendix), with substantial development over the centuries, and greater or lesser emphases on function, disease, oral health rather than dental health, bodily health, esthetics, mental and social well-being, and the priorities and views of those providing or seeking oral care.

The current World Dental Federation (FDI) definition of oral health – "Oral health is multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex" – is now widely cited. The accompanying framework highlights physiological function and disease as core elements of oral health, but also psychosocial function and well-being, and that oral health is embedded in the larger concept of general health.

DISCUSSION

Countless definitions of health and oral health have been proposed over the centuries, the sheer number showing the value many place on precise definitions. Some have stood the test of time; others have not. Where gender is included in a definition, it is invariably male. Inevitably, new definitions will be proposed in the future and old ones refined as concepts of health become better understood through qualitative and quantitative research. The nature of health, and distinctions between health and wellness, disease, and illness is still debated at length. Complete agreement in the future is unlikely, but many criticisms of the WHO definition still favor a multidimensional model of health that includes subjective assessments and personal values and goals. Disease and disability may always be part of health and health care, but modern consensus holds that an individual's mental and social well-being are also essential components. These are best assessed subjectively by individuals, based on their history, beliefs, priorities, expectations, and goals.

In contrast with many broad and non-biomedical definitions of general health, most definitions of oral health have focused narrowly on oral disease and function. Definitions of general health have authors from a wide range of backgrounds, but definitions of oral health are mostly written by dentists, many implying that oral health is dentist-determined. Only in recent years have some definitions recognized the mental and social well-being component of the 1946 WHO definition of general health and prioritized appearance, well-being, and the role of the oral region in speech and social interactions, despite the orofacial region having a disproportionate impact on an individual's self-image and social confidence. Inexplicably, even multiple WHO definitions of oral health (1965, 1983, and 2003) failed to do so. Not until almost 70 years after its landmark "well-being" definition of general health did WHO include the word "well-being" in a definition of oral health.

Until very recently, few definitions of oral health considered and valued individuals' subjective perceptions of their oral health status and well-being alongside the objective views of dental professionals. The two can differ substantially and this should not be concerning. Any disparity between objective and subjective health ratings simply presents an opportunity for further investigation, clarification, and education. Indeed, some insist that subjective ratings are preferable and most

useful when they do disagree with objective measures, since in these circumstances objective measures are clearly not detecting an important factor in the subject's environment.[29]

Despite "health" and "oral health" being conceptually similar items, definitions of oral health have often lagged decades behind changing definitions of general health. Notably, definitions of general health underwent a slow paradigm shift around the time WHO was founded in recognizing mental and social well-being as essential components of health, and thereby valuing individuals' subjective views regarding their own health status and expectations and desires for the future. Definitions of oral health did not undergo the same paradigm shift. Even the most recent fail to reach the inspired heights of definitions of general health. Dental authorities are unlikely to ever revert to definitions of oral health based solely on absence of oral disease and ability to chew food, but we have yet to see the oral health equivalent of general health's "... a love of life," "... a joyful attitude toward life" or simply "... flourishing."

Paradoxically, one contributor to the delayed development of oral health definitions may have been a watershed in public dental health research – Locker's conceptual model of oral health that criticized the view equating health with disease, and highlighted the importance of subjective assessments.[30] Despite acknowledging WHO's broad definition of health, Locker's model and the OHRQoL tools derived from it mostly highlighted the impairments, functional limitations, discomfort, disability, and handicaps associated with oral disease, not health and well-being *per se*. The model's view of oral health was, therefore, largely negative, not positive. Subsequent models of oral health have been more varied, and often less negative, but measurement tools, while all valuable, understandably still favor the easier to measure negative dimensions of oral disease over more difficult to measure positive dimensions of oral health.[27] "And so, unfortunately, we are apt to measure what we can, and eventually come to value what is measured over what is left unmeasured."[31]

CONCLUSION

The future definitions of oral health may include the presence, absence or severity of oral disease, or orofacial anomaly, but they must also consider an individual's subjective view of their own oral health status and well-being, and how these help or hinder attainment of functional, psychological, and social goals in life. Using the WHO's and subsequent definitions of general health as a guide, as has rarely be done in the past, future definitions of oral health should extend well beyond FDI's current "… confidence in function and expressing emotions."

But why is this important? Prioritizing subjective well-being and quality-of-life items in definitions of oral health encourages interventions and outcomes most valued by individuals and populations, and the development of tools that evaluate such interventions and outcomes. These will include positive and aspirational outcomes, not just the negative functional, psychological, and social impacts of oral disease. Apart from the greater insight into the needs and concerns of individuals and the psychological and social impacts of disease, health services may benefit from tools that assess the subjective benefits of prevention and treatment and can therefore guide future resource allocation and improve the efficiency and effectiveness of health systems. All dimensions of "oral health" are worthy. Prevention and treatment of disease are important, but equally so are people's beliefs, expectations and aspirations for their oral health. The success or failure of dental care and public oral health policy might therefore be best judged by the degree to which all definitional components of oral health can be assessed, measured, and achieved.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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APPENDIX

1. Definitions of health from 10th-mid 20th centuries

(Islamic physician Ali ibn Abbas al-Majusi, 10th cent.) "... a state of equilibrium"[1]

(Italian physician Giovanni Battista Morgagni, 18th cent.) "... clinical-anatomical integrity of the human organism"[2]

(1837) "... that condition of body in which the organic and animal functions are performed with a feeling of satisfaction"[3]

(1852) "... the perfect integrity of every structure, and the harmonious play of every function"[4]

(1869) "... the greatest energy of each part, compatible with the energy of the whole" and "... being able to do a good day's work easily"[5]

(1888) "... perfect organization in perfect action"[6]

(1889) "... freedom from pain and sickness; freedom also from all those changes in the structure of the body that endanger life, or impede the easy and effective exercise of the vital functions"[7]

(1861–1919, Herbert Spencer) "... the perfect adjustment of an organism to its environment"[8]

(1907) "... harmony – the actions of all the organs of the body perfectly adjusted"[9]

(1909) "... pure blood freely circulating in all parts of the body"[10]

(1916, Sigmund Freud) "... the capacity for enjoyment and active achievement in life"[11] and "... the capacity to love and work"[12]

(1918) "... the ability to perform all actions proper to the human body in the most perfect manner"[13]

(1921) "... a wholeness of the body; general bodily and mental vigor"[14]

(1922) "... the quality of life that renders the individual fit to live most and serve best"[15]

(1922) "... the power to live a full, adult living, and breathing life in close contact with what I love"[16]

(1923) "... a standard of personal vitality and physique that insures a positive enjoyment of existence"[17]

(1929) "... that condition of the body that exists when the body is meeting adequately (and without pain or damage) the demands of the moment"[18]

(1936) "... that condition of body in which all its organs and parts are sound and perform their functions duly, easily, and satisfactorily"[19]

(1937) "... not only a chemically efficient body but socially efficient relationships with other human biochemical organisms"[20]

(1939) "... more life and fuller"[21]

(1941) "A healthy individual is a man who is well balanced bodily and mentally, and well-adjusted to his physical and social environment. He is in full control of his physical and mental faculties, can adapt to environmental changes...and contributes to the welfare of society according to his ability. Health, therefore, is not simply the absence of disease; it is something positive, a joyful attitude toward life, and a cheerful acceptance of the responsibilities that life puts on the individual"[22]

(1941) "... the optimum of growth and happiness of the individual"[23]

(1943) "... an ability to adapt to one's environment"[24]

(1943) "... (one) primarily motivated by his needs to develop and actualize his fullest potentialities and capacities"[25]

2. Definitions of health post-WHO 1946

(1949) "... that state of the individual in which harmony exists between the various component parts of himself and between the individual as a whole and the circumstances and conditions of his external world"[26]

(1950) "... the capacity of the organism to maintain a balance in which it may be reasonably free of undue pain, discomfort, disability, or limitation of action including social capacity"[27]

(1952) "... maximum physical, mental and social efficiency for the individual, for his family and for the community"[28]

(1953) "... the strength to be"[29]

(1953) "... the constitution he is born with, and then on the success, he has in constantly adjusting either himself to his environment or his environment to himself, so that a reasonable degree of harmony is maintained both within himself and between himself and the social and material world in which he lives"[30]

(1956) "... the capacity to react favorably to the changes and chances of life"[31]

(1958) "... optimum capacity for the performance of valued tasks"[32]

(1959) "... the condition best suited for each individual to reach his or her personal and social goals"[33]

(1959) "... an integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable, within the environment where he is functioning"[34]

(1961) "... disease conquered"[35]

(1961) "... optimal personal fitness for full, fruitful, and creative living"[36]

(1962) "(someone who)... actively masters his environment, shows a unity of personality, and is able to perceive the world and himself correctly"[37]

(1965) "... that condition of the human organism that permits one to live happily and successfully"[38]

(1969) "... the degree to which a human's functions (sensing, data processing, and motioning.) are performed and pain is absent"[36]

(1971) "... 1) the capacity of the organism to maintain a balance appropriate to its age and social needs in which it is reasonably free of gross dissatisfaction, discomfort, disease, or disability; and, 2) to behave in ways which promote the survival of the species as well as the self-fulfillment or enjoyment of the individual"[39]

(1974) "... the individual feels that he is in perfect harmony with his environment and capable of meeting any contingencies (and) an individual's capacities for task and role performance are optimized"[40]

(1975) "... the ability to perform those functions which allow the organism to maintain itself, all other things being equal, in the range of activity open to most other members of its species... and which are conducive toward the maintenance of its species"[41]

(1982) a "... personal perception of well-being"[42]

(1987) "... a process of negentropic unfolding which reflects a person's way of living chosen ideals"[43]

(1997) "... a love of life"[44]

(1997) "... an individual's subjective experience of his/her functional, social and psychological well-being"[45]

(2002) "... a capacity for living"[46]

(2004) "... the way in which we live well despite our illnesses and disabilities"[47]

(2005) an ability to reach one's "...physical, mental and social potential, which satisfies the demands of a life commensurate with age, culture, and personal responsibility"[48]

(2011) an "... ability to adapt and self-manage in the face of social, physical, and emotional challenges"[49]

(2020) "... a state of flourishing."[50]

3. Definitions of oral and dental health

(1899) "... a sufficient number of sound teeth for efficient mastication"[51]

(1917) "... the normal equilibrium of the oral cavity and its contents"[52]

(1919) "... a clean mouth and a good looking, well cared-for set of teeth"[53]

(1921) "... teeth free from dental caries, and the soft tissues of the mouth pink and healthy"[54]

(1926) "... the teeth clean and free from stains and deposits, with no cavities and no broken down teeth which could not be filled"[55]

(1926) "... healthy and normal teeth... which are not patched up as a last resort, or are in such a condition as to have lost their vitality, but rather teeth with a minimum of dentistry done on them"[56]

(1943) "... the normal mouth, as far as the individual dentist is concerned, is what he thinks it should be. The concept of the normal is dependent on the intelligence and the education of the man behind the concept"[57]

(1944) "... an oral cavity free of infection (and) also be able to masticate"[58]

(1947) "... a satisfactory state of function, comfort, and appearance, provided that his condition has been completely appraised, that he has been informed of existing defects, and that proper treatment has been suggested and made available to him"[59]

(1948) "... freedom from diseases of the teeth"[60]

(1958) "... not simply absence of decay but fine facial form and superb dental arches"[61]

(1959) "... complete well-being of the teeth and their supporting structures"[62]

(1963) "... has received preventive treatment, is free from pain, is free from active carious lesions and has no significant periodontal involvement..."[63]

(1965) "... the preservation and maintenance throughout life of the oral structures free from disease to the highest level of function and beauty (and) the minimum amount of discomfort and effort"[64]

(1965, World Health Organization) "... complete normality and functional efficiency of the teeth and supporting structures and also of the surrounding parts of the oral cavity and of the various structures related to mastication and the maxillofacial complex"[65]

"... an acceptable status of oral hygiene and health of the periodontal tissues"[66]

(1979) "... such reasonable standard of dental efficiency and oral health as is necessary to safeguard general health"[67]

(1982, World Health Organization) "... the retention throughout life of a functional, aesthetic, and natural dentition of not < 20 teeth and not requiring a prosthesis"[68]

1993) "... the state of the mouth and associated structures where disease is contained, the future disease is inhibited, the occlusion is sufficient to masticate food and the teeth are of a socially acceptable appearance"[69]

(1993) "... a comfortable and functional dentition that allows individuals to continue in their desired social role"[70]

(1994) "... a standard of health of the oral and related tissues which enables an individual to eat, speak, and socialize without active disease, discomfort, or embarrassment and which contributes to general well-being"[71]

(1995) "... such a standard of health of the teeth, their supporting structures and any other tissues of the mouth, and of dental efficiency, as in the case of any patient is reasonable, having regard to the need to safeguard his general health"[72]

(1997) "... the ability to chew and eat the full range of foods native to the diet, to speak clearly, to have a socially acceptable smile and dentofacial profile, to be comfortable and free from pain and to have fresh breath"[73]

(1998) "... the absence of dental caries (tooth decay) and gingivitis (gum disease), combined with proper tooth and jaw function"[74]

(2003, World Health Organization) "... being free of chronic orofacial pain, oral and pharyngeal (throat) cancer, oral tissue lesions, birth defects such as cleft lip and palate, and other diseases and disorders that affect the oral, dental and craniofacial tissues"[75]

(2003) "... well-being as a result of a healthy and functioning mucosae, gingivae, and dentition"[76]

(2012, World Health Organization), "... being free from mouth and facial pain, oral diseases, and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial well-being"[77]

(2014, American Dental Association) "... a functional, structural, esthetic, physiologic, and psychosocial state of well-being.essential to an individual's general health and quality of life"[78]

(2016, World Dental Federation FDI) "Oral health is multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex."[79]

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