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Osteoporosis-Related Events Negatively Impact Quality of Life, But Does Quality of Life Impact the Outcome of Osteoporosis?

There is an escalating awareness in clinical medicine that self-perceived quality of life (QOL) can be a key outcome measure of quality of health care. There is considerable evidence that the complications of osteoporosis will have a negative impact on QOL. But less well recognized and of enormous potential clinical relevance is the question of whether perceived overall QOL will actually have an impact on osteoporosis and its complications. To explain this conundrum, it is necessary that the construct "QOL" be more clearly understood. The term QOL is still far too loosely defined; more often a cliché rather than the precise instrument it really should be.

Implications for Patients and Health Professionals

Quality of life is an issue that has important implications for both patients and the health professionals who provide medical care to them.[1] For example, how individuals perceive QOL depends on many factors and ultimately affects not only all aspects of functioning, but often satisfaction with the health care received. A patient's perception of quality of life may be critical to adherence to a prescribed plan of health care. If a patient believes a treatment will decrease distress now or in the future, she may be more likely to adhere to that treatment regimen. Similarly, if a treatment prescribed by a physician causes distressing side effects or if a patient worries that the treatment will cause harm, the patient may be less likely to comply with the plan of care.[2]

Objective versus Subjective Definitions

Perceived quality of life is difficult to define and measure because there is no universal agreement on what it is and how it can be quantified. Objective measurements of health status do not describe the patient's own sense of overall life satisfaction. Quality of life may be defined as a reflection of a person's beliefs about functioning and achievement in various aspects of life. From a behavioral perspective, it can be viewed as a spectrum that ranges from perceived distress at one end, to the absence of distress and a sense of well being at the other. From a medical perspective, quality of life is defined in the domains of physical and psychological functioning. 'Health-related' quality of life can be conceptualized as patients' perceptions of their physical, cognitive, and mental health.[3]

Somatic symptoms usually have a significant impact on perceived quality of life and it is very important that any quality of life assessment accurately identify and measure somatic symptoms. Nonetheless, while health status is a domain that may be critical to an individual's quality of life, it must be emphasized that the multi-

dimensional construct of quality of life is actually independent of health status. Rather, it is a subjective appraisal of life satisfaction. For example, one person may objectively be experiencing debilitating and/or painful symptoms but perceive their life as having excellent quality, while another person may be symptom-free but perceive their life to have poor quality. Therefore, the construct of quality of life may more accurately refer to a 'sense of well-being' that is impacted by the experience of symptoms but not solely determined by them. Indeed, the World Health Organization has emphasized that QOL should be perceived as being greater than disease or infirmity.[4]

In essence, then, a clear distinction needs to be made between health-related QOL (HRQOL) and global or overall QOL. With this background, it is worth considering the broad groups of instruments that can be applied to QOL in relation to osteoporosis.

Osteoporosis, in and of itself, is not a diagnosis impacting on QOL; it is a silent disease. The complications thereof, essentially fractures, are what will drive the impact on QOL through symptomatic and functional sequelae. Measuring QOL in osteoporosis would therefore be of value for the following reasons.[5]

1. To assess therapeutic tradeoffs
2. To compare safety and efficacy of different interventions
3. To compare the relative burden of different diseases
4. To assess the cost-effectiveness of different interventions

Measuring Quality of Life

Given the broad objectives, the varying definitions of QOL, and the global sense of well being versus the health-related perception of QOL, it should come as no surprise that several instruments are currently available that measure generic, performance, and disease-targeted factors,[6] and global QOL.

Generic instruments really measure functional ability that can be related to a medical problem; for example, using an instrument to quantify level of function, and then applying that measure of ability to function against a measure of osteoporotic vertebral compression factors.[7,8]

Symptom profile measures of functional status, such as the *SF-36*[9] and the Nottingham Health Profile (NHP),[10] are of value to assess co-morbidity and disease burden when evaluating osteoporosis. That is, they are measures of HRQOL.

Beyond the measure of overall functional ability and symptom profiles, it is essential to utilize a disease-targeted instrument—in this case, of course, the target being osteoporosis. Several osteoporosis-specific, health-related QOL instruments have been developed,[6] such as the *Osteoporosis Patient Assessment Questionnaire (OPAQ)*[11] (a self-report instrument), the *QOL Questionnaire of the European Foundation for Osteoporosis (QUALEFFO)*[12] (intended for use in clinical trials on vertebral fractures), and the *Osteoporosis Target QOL Survey Instrument for Use in the Community (OPTQOL)*[13] (an instrument allowing cross-cultural studies of the community impact of osteoporosis).

Finally, there are instruments being developed to measure global sense of well being in specific populations. The *Utian Quality of Life Scale (UQOL)*[14] is a measure of global QOL in women aged 45 to 65, and serves as one example.

To get the best assessment of overall QOL in osteoporosis, a combination of these instruments may be necessary. These should include measures of overall self-perception of health, function and impact of the disease on independence, and global sense of well-being.

Impact of Osteoporosis on Quality of Life

What, then, do we know about the impact of osteoporosis on QOL? Certainly, long-term outcomes of osteoporosis, such as fracture rates, physical changes like kyphosis, and pain, have been well documented. But it is only with the recent development of the instruments such as those outlined above, that the psychological affects, social consequences, and overall impact on quality of life are becoming known. Examples of such new information illustrate that health-related QOL is related to the number of vertebral fractures and not bone density,[15] that the effect of prevalent vertebral fractures is dependent on the location within the spine and is strongest in the lumbar region (L1-L4), and that incident vertebral fractures significantly decrease physical function, emotional status, clinical symptoms, and overall HRQOL.[16]

Does QOL Impact the Outcome of Osteoporosis?

That brings me to my key question in this discussion; namely, does QOL have an impact on osteoporosis and osteoporosis-related events? Common sense would suggest that an individual with good global QOL is more likely to exercise, eat a healthy diet, and, where indicated, adhere to therapy. But will that result in reduced bone loss or osteoporosis-related complications? We just do not know.

Few attempts have been made to determine the impact of global QOL on compliance/adherence with drug therapies, exercise programs or fracture outcomes. What has become manifestly obvious, is that persistence or adherence to therapeutic regimens is poor, something I have referred to in a previous editorial, and attempts are being made to determine the reasons for this situation.

The enigma of patients understanding the impact of poor compliance with treatment for a known condition yet not

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Osteoporosis-Related Events

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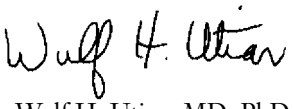
continuing medication has been well reviewed.[17,18] More specifically, early discontinuation of treatment for osteoporosis also remains poorly explained. It is clear that treatment side effects need to be minimized and that patients should be educated about the problem.[19] Nonetheless, that would not adequately address the issue of poor adherence to therapy.

There is, then, a need for recognition of the impact of osteoporosis-related factors on global QOL as well as an understanding of the reverse, namely, QOL on the development of osteoporosis and the incidence of osteoporosis-related complications. Understanding both sides of the coin would assist health care providers to more fully appreciate the relative importance of prevention and treatment. Moreover, a clearer understanding of these factors may well drive better adherence and persistence to treatments for osteoporosis.

To achieve this goal, well-validated instruments to measure both health-related QOL and global QOL will need to be further enhanced and utilized.



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