Perspectives

Outcome-Based Research Has an Important Place in the Scientific Community
by Robert Owre Uppgaard, D.D.S.

Lack of acceptance by many health professions of outcome-based research as a valid component of diagnosis and treatment of certain disorders has impeded the progress toward successful treatment of thousands, perhaps millions of patients, not only in the field of dentistry, but throughout the health-care professions. Medicine's insistence that only controlled studies, (e.g. random, double blind clinical trials), are valid diagnostic tools, denigrates the importance of what I call "patient variables" in diagnosis and treatment of diseases and disorders. In other words, what is the patient doing that influences the outcome of the treatment?

Outcome-based research, when properly applied, requires a uniform set of standards to measure, which consists of a consistent process and an anecdotal follow-up of patient progress at prescribed intervals. The main difference between outcome-based research and controlled research is the lack of a control group.

How does outcome-based research compare to evidence-based research? We could debate, analyze, scrutinize or critique the differences, if any. I suspect the goals are essentially similar. Please refer to the article, Evidence-Based Medicine: What It Is And What It Isn' t by David L. Sackett *et al.* that was posted on The Science Advisory Board Homepage.[1] Outcome-based research, however, may be more narrow in focus and measures the outcomes of treatment by obtaining actual anecdotal information from the patient at prescribed intervals.

My experience as a dental professional with forty-plus years of study, research and treatment of patients suffering from Temporomandibular Disorder (TMD), led me to the conclusion, early on, that patients' attitudes, past experiences, habits and behaviors influence the outcome of their treatment.

In 1980 Dr. Lawrence H. Meskin, DDS, MSD, MPH, PhD, helped me design a 10-year outcome-based study of 382 patients who were treated for TMD.[2] Records were kept on the patients' chief complaints, additional symptoms, ranges of motion, contributing factors, previous treatments, diagnoses, types of appliances used (if any), age, evaluation of trigger points, follow-up, and/or referral. A telephone follow-up was attempted on all patients at one-, five-, and eight-year intervals.

The value of such research is in expanding the focus from strictly traditional dental

considerations. The research allowed me to use the expertise of many practitioners both inside and outside the dental community without prejudice.[3-11, 15] The basic considerations in evaluating the results were whether the patient was helped and how the patient felt one to eight years later. If the patient was helped, what treatment modalities were effective in attaining a solution to the patient's problem?

Results of Patient Follow-up

Of the 382 patients treated, none needed to be referred for temporomandibular joint (TMJ) surgery. Eighty-six percent of patients treated for TMD had additional cervical and shoulder muscle involvement.[2] Clearly, successful treatment would have been highly unlikely without the dentist's understanding of the relationship of the total body to the TMD, as well as the roles of posture, referred pain, faulty work habits, muscle overloading, and previous injuries.[2]

Eighty-five percent of patients completed treatment, 6% were referred to physicians for medical consideration, 4% were referred to other TMD clinics or offices, 3% did not follow through with the recommended treatment plan, and 2% were diagnosed as not having TMD-related problems.

Of the total number of patients, 51% were reached by phone, with the follow-up time varying from one to eight years. A special effort was made to follow up six patients who were scheduled for surgery, as well as other challenging cases. There was absolutely no evidence of deterioration throughout that time. With short-term follow-up, 34% of the patients completed treatment, but had moved or could not otherwise be reached for long-term follow-up.

For 32 of the TMD patients, a whiplash injury was the precipitating factor.[12-15] Of the total number of patients, 79% were female: 21% were male. Conservative treatment of TMD hinges on successful diagnosis and management of patients while avoiding surgery. Conservative treatment requires understanding the total patient, not just the TMD. This involves evaluating posture, referred pain, oral habits, and the muscles of the body as they relate to the TMD.[2]

Stress is usually a factor.[3,7] However, stress does not cause pain or TMD problems directly. Behavioral habits that put continual strain on the muscles or joints, however, can result in enough repeated trauma to cause muscle (and sometimes joint) pain. It should be noted that recurring pain is usually due to another stressful event or regression to faulty habits.

Conservative treatment seeks to develop the patients' awareness of their problems, so that they can participate in the treatment plan and take charge of their program for lifelong success.

Summary of Study

Successful treatment of TMD is within the scope of the general dentist, providing the practitioner has an understanding of the patients' total problem, the treatment options, and the willingness to work with the patient. Documentation and use of a participatory treatment plan with the patient

are essential to successful treatment.

In addition to the symptoms associated with internal derangement of the TMD, cervical and shoulder muscles are usually involved and must be identified as part of the treatment plan. [5] The dentist must understand the relationship of the total body to the TMD. The role of posture, referred pain, faulty work habits, muscle overloading, previous injuries, and life experiences must be addressed for successful treatment.[15]

Using multiple disciplines and nontraditional, as well as traditional modalities, allows for greater flexibility in finding a successful treatment plan. Many TMD specialists are successfully using innovative techniques not recognized by many teaching institutions. It is time that recognition and credence are given to a multidisciplinary approach to TMD, and the results documented with outcome-based research.

Postscript

The completion and publication of the above study was not the end of the story. As I pursued my practice of general dentistry, I continued to document, for the next four years, an additional 144 TMD patients according to the same standards as the outcome-based study above. Encouraged by the results of the study and energized by the feedback from hundreds of my patients and support from colleagues, I determined to write a book for people who have, wonder if they have, or know someone who have TMD. [15] An estimated 60 million people in the USA are affected.

Although there is no specific data examining the societal impact of TMD and craniofacial pain, it is estimated that chronic pain in general costs our society over 80 billion dollars annually, with as much as 40 percent due to TMD and craniomandibular disorders.[16] The major challenge was in writing a medically accurate book in language the layperson could understand, and the professionals could use for patient education. The feedback has been overwhelming and gratifying thanks to the technology available today that brings people together from all parts of the world.

###
Robert Owre Uppgaard, D.D.S.

Dr. Uppgaard is a Steering Committee Member of The Science Advisory Board and has been an active member of The Science Advisory Board since March 2002.

References:

1 Sackett DL *et al.* Evidence-Bases Medicine: What It Is and What It Isn't.
British Medical Journal (BMJ 1996; 312:71-2)
2 Uppgaard RO. 1992. Conservative and successful treatment of TMJ dysfunction in a private rural practice. CRANIO: The Journal of Craniomandibular Practice . July 1992. 10(3);235-240

3 Selye H. The Stress of Life. New York:McGraw Hill Book Co.,1956; 264-265
4 Shore NA: What every dentist should know about TMJ dysfunction. Dent Survey 1970 46:36
5 Travell JG, Simons DG: Myofascial Pain and Dysfunction: The Trigger Point Manual. Williams & Wilkins, 1983; 47-169
6 Gelb H: Clinical Management of Head, Neck, TMJ Pain and Dysfunction: A Multidisciplinary Approach to diagnosis and Treatment. Philidelphia: W.B. Saunders Co. 1977; 81-495
7 Hathaway, K. 1987. Evaluation and management of maladaptive behaviors and psychological issues in temporomandibular disorder patients. Dental Clinics of North America. 41(2):341-354
8 Rocabado M: Physical therapy and dentistry. 1988 National AAFO Conference, Washington, D.C.
9 Travell JG, Simons DG; Myofascial Pain & Dysfunction Workshop. April 1988.
10 McKenzie R. Treat Your Own Neck and Treat Your Own Back. New Zealand Ltd. Spinal Publications
11 Barnes, JF 1990. Myofascial Release: The Search for Excellence - a Comprehensive Evaluatory and
Treatment Approach. Paoli, Penn: MFR Publications
12 Slavkin, H. 1997. Chronic disabling diseases and disorders: The challenge of fibromyalgia. The Journal of the American Dental Association 128:1583-1589.
13 Bennett, RM 1997. Fibromyalgia Review. Journal of Musculoskeletal Pain 5(4):71-86
14 Buskiila, D, et al. 1997. Increased rates of fibromyalgia following cervical spine injury; a controlled study of traumatic injury. Arthritis and Rheumatism 39;446-452
15 Uppgaard, RO. 1999. Taking Control of TMJ: Your Total Wellness Program for Recovery from Temporomandibular Joint Pain, Whiplash, Fibromyalgia, and Related Disorders. New Harbinger Publications, Inc
16 Fricton JR, Kroening RJ, Hathaway KM, TMJ and Craniofacial Pain: Diagnosis and Treatment.
Ishiyaku EuroAmerica. Inc. 1988; Preface & page 1