

Editorial

Does (the) Form Follow Function?

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“Form follows function” is a principle associated with modern architecture and industrial design in the 20th century, which states that the shape of a building or object should be predicated on its intended purpose. The origin of the phrase is traced back to American sculptor Horatio Greenough, but it was American architectural giant Louis Henri Sullivan who adopted it and made it famous.¹ Sullivan originally said, “Form ever follows function,” but the simpler “form follows function” is the phrase usually remembered. This term became Sullivan’s aesthetic credo and was for him the “rule that shall permit of no exception.”

In the era of quality-of-life (QOL) analysis, and specifically in reference to the paper by Newman and colleagues from Memorial Sloan-Kettering Cancer Center (MSKCC) in this issue of the journal, the more compelling question becomes, “Does the survey form follow function?”

The authors have utilized a specific form developed by the European Organization for the Research and Treatment of Cancer (EORTC) and have applied it to 123 of their own patients who have undergone sphincter-preserving surgery for stage I–III rectal cancer. They have utilized two specific forms developed by the EORTC that measure global QOL as well as social and physical function (EORTC-C30) and a specific instrument that measures gastrointestinal symptoms and defecation function (EORTC-

CR38). In their Methods section, the authors have alluded to utilizing a “modified Dillman method” but have not defined this for us. Obviously the methodology of conducting surveys may be one of the more important aspects of the outcome of their analysis.

The concept of the Total Design Method was developed by Don Dillman and is applied to survey methodology. It is based on the principle of convincing the study cohort that a problem exists that is of importance to a group with which they are identified.² More importantly, the subjects are encouraged to participate because their help is needed in finding an important solution to a problem. Dillman reports that a researcher should be portrayed as a reasonable person who, in light of the complexity of a problem, is making a reasonable request for help, and that this help by the subject will contribute to the solution of an important problem. The reward for the respondents is derived from the overall feeling that they have done something important to help solve a problem faced by them, their friends, or members of a group, including their community, state, or nation, whose activities are important to them.

Newman et al. report that the survey instruments were distributed to patients at the time of their clinic visit to MSKCC or through the mail by using a modified Dillman method. We are left to conjure as to the definition of a “modified Dillman” method, but we can only assume that the tenets outlined for survey completion by Don Dillman in his original treatise were followed. It is clear that the approach of researchers to respondents in a survey-related research effort are important to the outcome.

Surgical outcomes can be assessed in a number of ways, including complication rates, overall mortality, length of hospital stay, or economic consequences. The

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Holy Grail of outcomes analysis, however, may be the individual patient's assessment of the impact of an operation or treatment on his or her well-being. A variety of instruments have appeared that purport to specifically assess consequences resulting from a disease or remedy. By utilizing the EORTC-C30 and EORTC-CR38 survey instruments,³ the MSKCC researchers have concluded that these forms, especially the EORTC-C30, are insensitive means of studying functional differences after surgical procedures for rectal cancer. From a surgical standpoint, the specific gastrointestinal symptom subscales (EORTC-CR38) were not powerful enough to predict functional outcome on the basis of type of anastomosis, level of anastomosis, or method of rectal reconstruction. The authors conclude that the instruments developed by the EORTC are not powerful enough to detect differences in functional outcomes after treatment for rectal cancer. Although the authors are critical of the EORTC effort, they do not offer us any specific instrument for utilization. Perhaps this is a scheme to whet our appetite for their next journal submission!

As in any worthwhile publication, the authors allude to the specific limitations of their work. One of the significant methodological issues is the timing of interviews of patients relative to their treatments. In this study, 123 patients were interviewed at a variety of intervals after their surgical care for rectal cancer. It is obvious that patients have a variety of good and bad remembrances regarding function as they recuperate or adjust to their postoperative symptoms. In any research effort dealing with QOL instruments, it seems reasonable that the time to survey relative to the treatment intervention should be standardized.

An additional interesting fact was that a diverting ostomy was utilized in 56% of the patients in the study. Although the authors did not specifically address this, it seems that patient outcome, especially in a QOL analysis, may well be affected by the presence of a stoma and the consequences of this operative decision on their daily living.

Reverting back to the initial dictum that "form follows function," the overriding goal in the development of any meaningful QOL or functional instrument is to assure that specific questions on the form do in fact give a clear analysis of overall patient well-being or specific organ function. The authors are certainly correct that surgeons need these important data elements, not only to assess our patients postoperatively but also, and more importantly, to have some indication preoperatively of how patients might respond to a potentially aggressive surgical intervention that indeed characterizes the management of rectal cancer.

Whether in architecture or in the analysis of surgical outcomes, the form must follow function.

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