

An evaluation of patients' perceptions regarding use of the ACS NSQIP surgical risk calculator during preoperative risk discussion

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Background

A critical component of an informed surgical consent is the discussion of potential perioperative risks. National healthcare institutions, such as Centers for Medicare and Medicaid Services, have begun advocating for surgeons to provide patients with *personalized* risk estimates of perioperative complications. In response, the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) developed a risk calculator that can provide numerical estimates of empirically-derived, patient-specific risks for common adverse perioperative outcomes. This risk calculator was promoted as a validated tool to improve shared decision-making and informed consent for patients undergoing elective operations. To our knowledge, no data is available regarding the use of this calculator in preoperative risk discussions with patients. Our objective was to evaluate patient perceptions of the calculator and the impact of reviewing their personalized risk estimates from the risk calculator in a preoperative clinic setting.

Methods

Patients presenting to a preoperative clinic during a one-month period completed an initial survey that inquired about their understanding of their perioperative risks. Participants were asked to predict their hospital length of stay and to estimate their personal risks of the 12 postoperative complications that are computed by the ACS NSQIP surgical risk calculator. Risk calculation was performed by entering patient-specific variables/demographics into the ACS NSQIP surgical risk calculator. An anesthesiologist reviewed the predicted risk results with the patients. A follow-up survey was administered to evaluate patients' attitudes and perceptions regarding use of the calculator in discussion of perioperative risks. Patients were given a \$25 gift card as remuneration for participation in their study. Average time for completing study procedures was 30 minutes.

Results

Of the 157 patients approached, 150 consented to and completed participation in the study. Of these, zero (0%) claimed familiarity with or previous exposure to the ACS NSQIP surgical risk calculator. A majority of participants (89%) felt that doctors should share their personalized risks before agreeing to surgery. High-risk patients, defined as $\geq 10\%$ risk of serious complication by the ACS NSQIP calculator, were more likely to underestimate their risk of complications as compared to low risk patients (see Figure, $P < 0.0001$). Knowledge of personalized risk estimates had no effect on anxiety levels in 20% of patients, and decreased anxiety in 71%. After reviewing their predicted risks, 77% of patients stated they would consider participating in a structured pre-habilitation program in order to decrease their

perioperative risk of complications, and 38% of patients would delay their surgery in order to do so.

Conclusions

In modern medicine, the practice of informed consent is designed to equip the patient with knowledge to participate in and contribute to shared decision-making. The relational nature of this process is intended to promote the coordination between the medical care delivered and patient values. Although the ACS NSQIP calculator was marketed specifically to aid preoperative consent discussions, it is unclear if the calculator is being used as intended. Based upon our sample, it appears that the ACS NSQIP risk calculator is an underutilized resource that patients feel should be incorporated into the surgical consent process. Participants viewed estimation of their personalized risks to be an important part of the consent process, and an overwhelming majority expressed a desire to see their results prior to consenting for surgeries in the future. Our study has also shown that insight and awareness of one's perioperative risks may reduce anxiety. Knowledge of individualized risk may provide motivation for patients to participate in a structured prehabilitation program, which has important implications to the future of perioperative medicine.

