Evaluating the usefulness of patient education materials on surgical site infection: A systematic assessment

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Key Words:
Patient education
Surgical site infection

Surgical site infections (SSIs) cause prolongation of hospital stay, increased costs, and mortality.1 In addition to best practices for SSI prevention, such as perioperative antibiotic prophylaxis, cutaneous antisepsis, and normothermia, patient education for prevention of SSI is essential.2,3 However, although patient education materials abound in the literature, the degree to which they are of value to the intended user (the patient) is unclear. Moreover, the understandability and actionability of these educational tools for patients are ambiguous. Many education materials are not written at an acceptably low reading level, leading to barriers to patient engagement in their own care.4,5 With patients as a key part of our research team, we undertook a systematic assessment of easily available patient education materials for SSI using a validated evaluation tool, the Patient Education Materials Assessment Tool (PEMAT).6 The PEMAT is used to systematically evaluate the actionability and understandability of patient education materials.

METHODS

Because many patient education materials are accessible online for lay audiences and many patients use the Internet to gather additional health information, we conducted an environmental scan of materials for patient education on SSIs online.7 Major field-relevant search engines (eg, Bing, Google, PubMed) were used. Keywords and phrases included the following: SSI, SSI prevention, surgical site infection, surgical site infection prevention, what patients can do to prevent surgical site infections, and surgical site infection patient education materials. This methodology was used to make the scope of the investigation as broad as possible. The search was undertaken on March 11, 2014. Inclusion criteria for selecting material were educational materials seeking to inform patients on preventing SSI from public or private health care institutions or agencies.

To evaluate the understandability and actionability of patient education materials found in the environmental scan, we used the PEMAT. In the PEMAT, 17 statements are used to determine understandability, and 7 are used to determine actionability.8 The understandability statements focus on the content, specifically the clarity, organization, layout, and use of visual aids. The material is scored on its word choice and ability to make the reader familiar with medical terminology and its use of quantitative information. In accordance with the U.S. Department of Health and Human Services recommendations, materials were considered easy to read if they were at a maximum sixth grade reading level.8 The materials were evaluated on the overall organization and length of sections within the material. Sections >50 words were considered long. Use of visual aids was rewarded. The actionability of the materials was graded on its capacity to give the reader clear actions to take, provide the reader with a tangible tool (ie, a checklist), and directly address the user when describing the action. Responses to statements were rated as either 0 (fail to meet the statement) or 1 (satisfied the statement) or n/a (not applicable to the material). Not applicable to the material was only an option for statements that addressed the user when describing the action. Three independent reviews were conducted to corroborate the PEMAT results. Descriptive statistics were generated using Microsoft Excel (Microsoft, Redmond, WA). Interrater agreement was calculated using the κ statistic. Disagreement was resolved by consensus.
RESULTS

We found a total of 21 patient education materials that met our inclusion criteria. The understandability of patient education materials found averaged at 75%, with a range of scores between 23%-100%, whereas the overall actionability average was 49%, with scores ranging from 20%-80%. Most materials found did not contain graphics, despite patient feedback indicating that visual aids are preferred over text. Of the materials evaluated, 95% did not provide the patient with tangible tools (i.e., a checklist) that they could apply to their postoperative care. Only 5% of materials used a sufficiently succinct or brief summary. A summary of the understandability and actionability scores for each of the patient education materials for SSI is shown in Table 1. The k statistic was 80%, indicating good interrater agreement.

DISCUSSION

The low actionability and understandability ratings that most of the SSI patient education materials received using the PEMAT indicate that there is room for much improvement in this area. Currently available patient education materials for SSI need to be optimized from the patient’s viewpoint. Feedback from surgical patients indicates that usage of infographics and visual aids in education materials are strongly beneficial; however, most currently available SSI education materials lack these attributes.

Additional patient input indicated that more succinct materials are more useful than the wordy, cluttered alternative. In general, the materials found in the course of our environmental scan failed to meet both the criteria of the PEMAT, resulting in low actionability and understandability ratings, and did not satisfy the criteria we received from patient input pertaining to education materials. In an effort to better engage patients on SSI prevention, additional improvements that may be helpful include the use of tangible tools (i.e., checklists), visual aids, and a focus on prevention tasks that have a greater patient role.

Our study has several limitations. The PEMAT is a useful tool for assessing the usefulness of patient education materials. However, a limitation of the tool is the absence of a grading system. We attempted to capture as many online educational materials as we could find but in all likelihood publication bias is present. Many institutions may have educational materials that are not shared on the worldwide Web and therefore were not accessible to us. The scope of our article was to undertake a gap analysis regarding the currently available materials on patient education. The PEMAT has not been evaluated as a materials development tool and can only serve as an assessment tool once materials have been developed.

These limitations notwithstanding, the findings of our study can be used to guide development of comprehensive, focused, succinct, and easy to understand patient education materials for SSI to enhance their usefulness to the patient.

References