The key to reducing pain in surgery may already be in your hand

April 29 2015, by Melissa Osgood

Imagine a hand-held electronic device - accessible, portable and nearly universal - that could reduce pain and discomfort for patients, and allow doctors the freedom to use less powerful and potentially risky medications to complement anesthesia.

Now reach in your pocket, because chances are you already own one.

According to new research from a team led by Communications and Information Science Professor Jeff Hancock and Cornell doctoral student Jamie Guillory (now at RTI International), the simple act of texting someone on a mobile phone during a minor surgical procedure done under local anesthetic can significantly reduce a patient's demand for narcotic pain relief. Make that text buddy a stranger, and the odds a patient will ask for medications to take the edge off could be as little as one-sixth of those who go under the knife with empty hands.

"These findings suggest that the simple act of communicating with a companion or stranger provides an analgesic-sparing effect," the authors write in the journal *Pain Medicine*. "The data also suggest that text-based communication with a stranger is more effective."

Building on research that has shown social support before and during medical procedures can reduce anxiety and perceptions of pain, Hancock and his team decided to test whether mobile phones that allow patients to send text messages or play games could bring that support benefit into settings where the company of family members or friends is not

possible.

Together with Hancock and Guillory, physicians Christopher Woodruff and Jeffrey Keilman from McGill University working at LaSalle Hospital in Montreal used an experiment to track four groups - patients receiving standard mobile phone-free perioperative treatment, those using a mobile phone to play the game Angry Birds, patients using a mobile phone to text with a close friend or family member, and others invited to text with a research assistant instructed to focus on "getting to know you" conversations. Neither the 98 patient volunteers who took part from January to March 2012, the research assistant texting nor nine of the 10 treating anesthesiologists (the lone exception being co-author Woodruff) were aware of the nature of the research, and treatment in all cases was left entirely to the discretion of the physicians.

Still, when the research team analyzed the results, they found that patients receiving "standard therapy" - meaning those not using mobile phones during surgery - were almost twice as likely to receive supplemental pain relief as patients who played the game Angry Birds before and during the procedure. The same patients were more than four times as likely to receive additional analgesic as those texting a companion and - most notably - more than six times as likely to receive additional narcotic relief as patients who engaged in a texting conversation with a stranger.

To verify that latter effect and explore its source, the team took the additional step of analyzing the language of the two groups allowed to text during their surgeries. Hancock and his team found that, while the text conversations with companions related more to biology, the body and negative emotions; the texts with a stranger included more words expressing positive emotions, with patients writing more often about self-affirming topics.

The authors say this study provides the first evidence that texting offers this benefit beyond traditional treatment or even "distraction" methods such as playing a video game. The team called for new work to explore exactly what type of conversations work best, and how far this benefit can be developed to assist patients and doctors.

"Our findings suggest that text messaging may be a more effective intervention that requires no specialized equipment or involvement from clinicians," the authors write. "Even more importantly, text-based communication may allow for the analgesic-sparing benefits of social support to be introduced to other clinical settings where this type of support is not otherwise available."

Provided by Cornell University

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