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# Patient perceptions of text-messages, email, and video in dermatologic surgery patients

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## Abstract

**Introduction:** We developed dermatology patient education videos and a post-operative text message service that could be accessed universally via web-based applications. A secondary outcome of the study was to assess patient opinions of text-messages, email, and video in the health care setting which is reported here.

**Methods:** An investigator-blinded, randomized, controlled intervention was evaluated in 90 non-melanoma MMS patients at Wake Forest Baptist Dermatology. Patients were randomized 1:1:1:1 for exposure to: 1) videos with text messages, 2) videos-only, 3) text messages-only, or 4) standard of care. Assessment measures were obtained by the use of REDCap survey questions during the follow up visit.

**Results:** 1) 67% would like to receive an email with information about the procedure beforehand  
2) 98% of patients reported they would like other doctors to use educational videos as a form of patient education  
3) 88% of our patients think it is appropriate for physicians to communicate to patients via text message in certain situations.

**Conclusion:** Nearly all patients desired physicians to use text-messages and video in their practice and the majority of patients preferred to receive an email with information about their procedure beforehand.

*Keywords: patient, preference, technology, text-messages, email, video, dermatologic, surgery*

## Introduction

Emerging technologies such as text-messages, email,

and video have been used in dermatology to improve patients' experience and outcomes of care. The use of these new technologies represents an effort by health care teams not only to make patient education more accessible but also to cater to the preferences of the patient. Oftentimes, the best method of patient education is the means that the patient is most likely to use. Therefore, when assessing new means of education—ease of use, acceptance, and likeability are key determinants in the long term success of these interventions.

Increasing numbers of patients own cell phones and text messaging is a cost effective avenue for communicating with patients. Text messaging can be effective in providing reminders and education to dermatologic patients [1, 2]. Patients with atopic dermatitis who received text message reminders about self-care behaviors reported high satisfaction with the service and a desire to continue to use the service. They were likely to recommend the service to others [1]. In a short-term study designed to use text messages to improve medication adherence, roughly 92% of patients in the group receiving text messages were willing to recommend this intervention to others around them such as family and friends [3]. Studies have generally shown patient approval with the use of text messages for communication, but excessive text messaging with patients can lead to annoyance and disapproval. This same study found patients were less satisfied with daily text-messaging [3]. Although text messaging represents a good option to communicate with patients, it is critical to adjust the frequency of messages to ensure the highest possible level of patient satisfaction.

E-mail communication also represents a good option

to communicate with patients. Whereas not all patients utilize text messaging, most patients have access to email in some form. Although personal email is less commonly used for physician-patient communication, it can be appropriate in certain situations. The lower security of personal email communication makes correspondence of protected health information inappropriate, but can be ideal for delivery for education materials [4]. Studies involving emergency department care showed a significant increase in patient satisfaction with post-visit contact involving email and phone calls. However, physicians tended to favor email owing to a lower time commitment [5].

Video education is an increasingly popular means of communicating standardized information to patients in a more interactive form. Videos in the healthcare setting are well suited for teaching patients, particularly those with limited education, and are highly approved by patients [6, 7]. Studies of lung cancer patients assessing patient satisfaction with regard to video education supplementation showed improvements in multiple areas including satisfaction, anxiety, surgery preparedness, and pain perception [8, 9]. Amongst dermatologic surgery patients undergoing Mohs surgery, 74% of participants preferred video based wound care education over physician instruction [6].

A major limitation of video based education is the lack of personalized information pertaining to the individual patient owing to standardization of content [10]. In the case of dermatologic surgery, each patient's procedure is different based on individual cancer characteristics and videos may not adequately address each patient's procedure accurately, potentially leading to a lower rate of satisfaction with the provided videos. Subjects may also vary in their preference of materials based on education level and comfort with technology. Although there is still a need to analyze whether video satisfaction may be affected by age of patient and education levels, video based education in melanoma showed that subjects exposed to videos rated their usefulness and appeal significantly higher than written educational materials. The majority of patients in both groups identified that they would prefer video based education in their care (85% and

62% respectively) [9].

Although the use of more technological communications is beginning to become part of some physician's arsenal when it comes to educating patients, the standard of care usually remains verbal and written physician instructions. Whereas digital forms of communication have limitations, patients generally report high satisfaction and preference for these methods. There is a need for further identification of which forms of communication patients prefer, especially in the field of dermatology. As part of our web based patient education study in dermatology surgery, we assessed patient opinions of text-messages, email, and video in the health care setting.

## Methods

### ***Study design and population***

The aim of this study was to develop dermatology patient education videos and a post-operative text message service that could be accessed universally via web-based applications (DermPatientEd.com and DermTexts.com). A secondary outcome of the study was to assess patient opinions of text-messages, email, and video in the health care setting, which is reported here. An investigator-blinded, randomized, controlled study was approved by the Institutional Review Board (IRB) of Wake Forest Baptist Health (WFBH). Participants were recruited from the dermatologic surgery clinic from March to December, 2015. Patients had to be over age 18, have a medical indication for Mohs surgery, have a mobile phone capable of receiving text messages, and attend all study visits.

### ***Study procedures***

Study nurses identified eligible subjects and approached subjects in the exam room where informed consent was obtained. Ninety participants receiving Mohs surgery were randomized 1:1:1:1 in a non-stratified randomization scheme by factorial design into two primary groups (videos versus no videos) and two subgroups (text messages vs no text messages). Randomization was performed using REDCap data management software [11]. The Mohs surgeons (DP and PW) were blinded regarding assigned study groups of participants.

## Assessment measures

Patients were assessed by REDCap survey questions during the follow-up visit which occurred one week after surgery in all patients.

## Results

67% would like to receive an email with information about the procedure beforehand.

98% of patients reported they would like other doctors to use educational videos as a form of patient education.

88% of our patients think it is appropriate for physicians to communicate to patients via text message in certain situations.

## Conclusion

Prior studies have demonstrated health care patients are accepting of text messaging interventions. Patients report high satisfaction with these services and a desire to continue using them. Most would recommend these services to others with the caveat that daily text-messaging can be excessive [3]. Data from our study supports these findings with 88% of patients saying it is appropriate for physicians to communicate to patients via text message in certain situations.

Although personal email is inappropriate for sending protected health information, email can be an ideal vehicle to communicate educational information to patients [4]. Our study supports these findings with 67% of dermatologic surgery patients identifying they would like to receive an email with information about their procedure beforehand.

Video based education is highly accepted by patients in dermatology as well as other medical disciplines. Videos provide standardized information in a more interactive format than traditional pamphlets and are ideal for patients from a variety of educational backgrounds. In our study, 98% of patients reported they would like other doctors to use educational videos as a form of patient education.

Text-messages, email, and video are increasingly used as time sensitive, cost effective ways of communicating with patients. Herein we have

identified prior studies in medicine in general, but also within dermatology that indicate patients' preference for more digital media in healthcare. Data from our study further supports these findings. We found that nearly all patients desire that physicians use text-messages and video in their practice and the majority of patients prefer to receive an email with information about their procedure beforehand. Our study builds on the growing body of literature that suggests that patients prefer an increased use of digital media in the practice of dermatology.

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