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Conference Abstract

Using psychophysiology to study the emotional impact of words used in behaviour change text messages

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Abstract

Introduction: There is growing interest in the use of text message (SMS) interventions to deliver more effective health promotion messages to a broader audience. Tailoring such communications to reach people on an emotional level has been reported to be effective. Studying psychophysiological responses (e.g. electrodermal activity (EDA) and facial electromyography (fEMG)) may help us understand the emotional significance of a text message. This should help us develop more emotionally appealing text messages with increased impact on important health and lifestyle problems.

Aims and objectives: To explore the utility of EDA and fEMG methods to understand the arousal and valence (pleasure) dimensions of words frequently used in SMS interventions promoting physical activity (PA).

Methods: We recruited 40 participants 18 to 45 years old. They read sample words that appeared on screen while we measured their electrodermal activity and facial electromyography. Participants were exposed to 30 words including 18 words of known valance and arousal from the ANEW list, their name, 5 frequently used words in SMS interventions promoting PA, and 5 nonsense words (e.g. napsate) on five occasions in random order.

Results: There were moderate correlations between corrugator supercilii reactivity and valence, and electrodermal activity reactivity and arousal rating for words taken from the ANEW list. As expected the name of the participant elicited the greatest arousal and some low arousing words the least.

Conclusions: The moderate association between the psychophysiology measures and the known rating values for the words shows that fEMG and EDA gives us useful insights into people's emotional reactions to words. These methods could be used to evaluate SMS message before deploying them in an intervention and thus improve the impact of the SMS library. The participant's high response to their name recommends its use as part of SMS messages for behaviour change

to increase emotional impact. Surprisingly, the participant name was not used in any of the 5 text message libraries for physical activity promotion that we have been able to collect.

Further investigations are now comparing levels of arousal and valence in text messages used in successful and unsuccessful interventions to see if is possible to predict the likelihood of success. Modifications of unsuccessful and messages with low emotional significance will also be explored to increase their impact using insights from this and previous studies.

Keywords

electrodermal activity; facial emg; behaviour change; sms

PowerPoint presentation:

https://www.conftool.pro/digital-health-care-2014/index.php?page=adminPapersDetails&path=adminPapers&form_id=130
