

Analogue patients' self-reported engagement and psychophysiological arousal in a video-vignettes design: Patients versus disease-naïve individuals



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ABSTRACT

Objectives: The ecological validity of video-vignettes design investigating patient-provider communication hinges on the engagement of analogue patients (APs) with the vignette. The present study aimed to compare engagement in two commonly utilized groups of APs, patients and disease-naïve individuals. Engagement was assessed by self-report and in the form of physiological arousal.

Methods: Cancer patients (N=22) and disease-naïve individuals (N=24) were recruited as APs. APs completed the Video Engagement Scale after watching a vignette of an oncologic bad news consultation. Electrodermal and cardiovascular activity were assessed continuously during watching the vignette, and cortisol levels were assessed in four saliva samples.

Results: Patients reported higher engagement with the vignette than disease-naïve individuals ($t = 2.46$, $p < 0.05$) and showed a larger blood pressure response (systolic: $F = 5.87$, $p < 0.01$ and diastolic: $F = 4.00$, $p < 0.05$). However, these differences disappeared after adjusting for age. No group differences were found on other psychophysiological parameters.

Conclusions: Our results suggest that patients and disease-naïve individuals are equally engaged when viewing video vignettes. When group differences were found, older age turned out to be a more prominent predictor of engagement.

Practice implications: Researchers may consider other arguments besides APs' disease history when selecting an AP group.

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1. Introduction

Researchers increasingly use video vignettes to systematically study the effects of patient-provider communication on patient outcomes [1–3]. Scripted video vignettes involve recordings of prewritten scenes in which actors mimic an interaction between patient and care provider, such as a doctor-patient consultation. Video-vignettes designs provide an ethical alternative to

manipulating communication in real medical consultations. Moreover, they allow for standardization of material (e.g., provider characteristics, wording, intonation), thereby creating the opportunity to investigate causal relationships. In such research, different versions of a video vignette can be created of the same consultation, systematically varying only the specific elements of communication that are deemed of interest, e.g., the addition of a few empathic statements from the provider [4]. Consequently, the impact of specific elements of communication on outcomes can be investigated, such as participants' emotional distress [4,5] or recall of information [4,6].

Participants in patient-provider video-vignettes studies are called 'analogue patients' (APs). They can be either current or former patients [7–10] or disease-naïve ('healthy') individuals [4,11,12], who are instructed to imagine themselves in the situation of the patient observed in the video [1]. Although previous

Abbreviations: APs, analogue patients; SCL, skin conductance level; SCRs, skin conductance responses; SBP, systolic blood pressure; DBP, diastolic blood pressure; HR, heart rate; CO, cardiac output.

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research confirmed that the AP methodology is a valid approach to gathering data about patient-provider interaction [2,3,13], this research did not differentiate between patients and disease-naïve individuals as APs. An assumption critical to the ecological validity of video-vignette designs, i.e., the extent to which the experience of APs resembles the experience of patients in real-life medical consultations, is that APs engage with the video vignette, and this engagement may differ between AP groups. We used the term 'video engagement', derived from the field of persuasive communication (for an example see Ref. [14]), to allude to a state in which APs view the video intently, immerse in the video vignette's story, imagine themselves being in the video patient's position, and experience emotions accordingly [15]. It seems reasonable to assume that patients might engage more readily than disease-naïve individuals because they can rely on experience. So far, only two patient-provider video-vignettes studies compared patient and disease-naïve APs. Both showed little difference between patients and disease-naïve individuals on various outcomes, such as consulting style preferences, satisfaction ratings [16], physician compassion and attribute ratings, state anxiety, treatment choices and information recall [17]. However, differences in engagement have not been tested, and this forms an important limitation to the current literature. Hence, it seems important to compare both participant groups on that ability.

To assess APs' engagement while viewing video vignettes, the 15-item self-report Video Engagement Scale (VES) has been developed and validated [15]. Although informative, relying on retrospective self-report only, might be prone to bias. Additionally, differences in the emotional component of APs' engagement could be investigated more objectively by measuring APs' physiological responses during the video vignette. The emotional response to a video vignette is an important component of video-vignette engagement, which would be an expected response during watching video vignettes with a (strong) emotional content (e.g. a bad-news consultation). Physiological activity varies as a function of psychological change and could therefore be used to make inferences about psychological processes, such as emotional arousal, during watching the video vignette [18]. For example, electrodermal activity (EDA), also known as skin conductance, is a sensitive marker of sympathetic nervous system activity, and therefore one of the most widely used psychophysiological parameters of emotional arousal [18]. As such, EDA has recently been successfully used in a video-vignettes study, showing that APs' emotional arousal after receiving bad news showed a stronger decrease with clinician's who used a more affective communication style [4]. However, it is often recommended to use more than

one psychophysiological measure by monitoring additional physiological response systems [19]. Adding assessments of cardiovascular (e.g., heart rate) and hormonal (e.g., cortisol) activity, will provide a more comprehensive assessment of APs' physiological arousal, and thus emotional engagement during watching a patient-provider video vignette. Moreover, such a multi-parameter study design would provide us with information about the sensitivity of various psychophysiological parameters in a video-vignettes design using APs.

In light of the preceding discussion, the present video-vignettes study aimed to determine which AP group shows most engagement by answering the following research questions: (1) Does self-reported engagement differ between APs who are (former) patients versus disease-naïve individuals?; (2) Do the psychophysiological responses to the vignette, i.e., increases in electrodermal, cardiovascular and hormonal activity, differ between these APs groups?

2. Methods

2.1. Design and ethics statement

This experimental video vignettes study is part of a research line that aims to understand and improve provider-patient information transfer in oncology. Accordingly, the video vignette used involved a medical consultation with a cancer patient. The Academic Medical Center's Medical Ethics Committee approved the study protocol and participants provided written informed consent.

2.1.1. Development of video vignettes

A detailed description of video-vignettes development is provided in [Appendix A](#). In brief, following published recommendations [1], the bad-news consultation script was developed first, which involved an oncological surgeon and a patient with advanced oesophageal cancer. The consultation included two phases: a discussion of the cancer diagnosis and prognosis (the bad news phase or P1), followed by the provision of additional information about treatment options and side-effects (the information phase or P2). After inviting and incorporating feedback from experts on the script and a pilot video recording of the script, the final video vignettes were determined and recorded. A voice-over introduction was added to the video vignette, showing the patient in the waiting room. Excluding the 50 s introduction, video duration was 6 min and 26 s (male video patient) and 6 min and 19 s (female video patient).

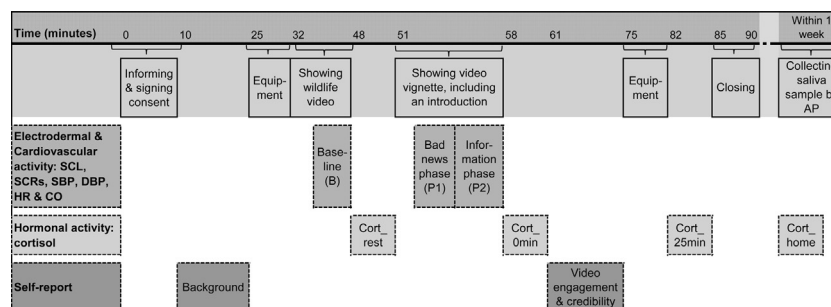


Fig. 1. Overview of experimental procedures.

Notes. On average the experiment lasted for 90 min. Electrodermal and cardiovascular activity were measured continuously during three periods of interest: a baseline period (B) and two successive phases of the video vignette (P1: the bad news phase, and P2: the information phase). SCL = skin conductance level; SCRs = skin conductance responses; SBP = systolic blood pressure; DBP = diastolic blood pressure; HR = heart rate; CO = cardiac output. Hormonal activity was assessed by measuring cortisol levels in saliva, sampled at four points in time: three samples were collected by the investigator during the experiment and one sample was collected by the analogue patient (AP) within one week after the experiment. Analogue patients completed a background questionnaire before watching the video's and afterwards they reported on their level of engagement (by means of the Video Engagement Scale) and their perceived credibility of the video vignette.

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