# Specifying the effects of physician's communication on patients' outcomes: A randomised controlled trial

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## ABSTRACT

Objective: To experimentally test the effects of physician's affect-oriented communication and inducing expectations on outcomes in patients with menstrual pain.
Methods: Using a $2 \times 2$ RCT design, four videotaped simulated medical consultations were used, depicting a physician and a patient with menstrual pain. In the videos, two elements of physician's communication were manipulated: (1) affect-oriented communication (positive: warm, emphatic; versus negative: cold, formal), and (2) outcome expectation induction (positive versus uncertain). Participants (293 women with menstrual pain), acting as analogue patients, viewed one of the four videos. Pre- and post video participants' outcomes (anxiety, mood, self-efficacy, outcome expectations, and satisfaction) were assessed.
Results: Positive affect-oriented communication reduced anxiety ($p < 0.001$), negative mood ($p = 0.001$), and increased satisfaction ($p < 0.001$) compared to negative affect-oriented communication. Positive expectations increased feelings of self-efficacy ($p < 0.001$) and outcome expectancies ($p < 0.001$), compared to uncertain expectations, but did not reduce anxiety. The combination of positive affect-oriented communication and a positive expectation reduced anxiety ($p = 0.02$), increased outcome expectancies ($p = 0.01$) and satisfaction ($p = 0.001$).
Conclusion: Being empathic and inducing positive expectations have distinct and combined effects, demonstrating that both are needed to influence patients' outcomes for the best.
Practice implications: Continued medical training is needed to harness placebo-effects of medical communication into practice.

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## 1. Introduction

Communication is one of the cornerstones of high quality medical care. The way physicians communicate with their patients elicits genuine effects on patient outcomes. These effects can be seen as placebo-effects [1–5] which can be explained by psychological mechanisms, such as anxiety reduction and expectancy manipulation [6,7]. Hence, physicians' affect-oriented communication and the induction of expectations are expected to produce placebo-effects along these two distinct pathways [1,2,8].

First, positive affect-oriented communication, i.e. communicating in a warm, reassuring manner, being empathic, and addressing patients' emotions, is targeted at establishing a good physician–patient relationship. It can reduce patients' anxiety and distress, and provide them with a feeling of support and caring [1,2,8,9] while also improving outcomes such as satisfaction and adherence [10–12]. Contrary, the lack of empathy or negative affect-oriented communication is associated with adverse effects, including an increase in patients' anger and frustration [13], deteriorated recall [14], and even malpractice claims [15].

Second, raising expectations about one's prognosis or treatment outcome can shape patients' beliefs about the controllability of the treatment (i.e. outcome expectancy) and alter their beliefs about one's ability to cope with the disease and its treatment (i.e. self-efficacy) [16]. The verbal suggestion that a drug has powerful effects creates placebo effects, such as decreased pain, anxiety, and

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opioid intake [17–21]. Framing expectations is important for the direction of the effect [22,23], and patients' expectations regarding painful or adverse effects are important determinants of unwanted effects [24,25].

While these distinct communication elements can influence patients' outcomes, few studies have assessed the relative and combined contribution of affect-oriented communication and inducing expectations. In their study on patients with bursitis or tendonitis, Berk et al., for example, showed that a positive milieu in which acupuncture was delivered contributed to the effect resulting from (the suggestion of) being treated [26]. Gryll and Katah [27] found that enthusiastic messages of drug effects lead, among others, to significant lower ratings of pain. More recently, Kaptchuk et al. showed the added value of the doctor-patient relationship augmented with warmth, attention, and confidence on symptom severity in irritable bowel syndrome being treated by acupuncture [28].

In a previous (pilot) study [29], we asked women with a history of period pain to role-play a consultation with a trained physician, who displayed either a high or low affective attitude and raised high or low expectations about the effect of prescribed treatment, and to subsequently view their role-played interaction on video. This study showed that both types of communication had positive, but distinct effect on patients' outcomes [29]. However, whether the same results would be found in a larger study and with a more rigorous methodology is unclear. The aim of the present study therefore is to extend our previous study and experimentally manipulate and examine the relative and combined effects of physician's affect-oriented communication and the induction of expectations. Videotaped medical consultations were used depicting a physician and a patient discussing menstrual pain. Menstrual pain was chosen as (menstrual) pain is credited with being subject to placebo-effects [18–20,30] and is a frequently reported symptom [31]. It is expected that: (1) positive affect-oriented communication by the physician decreases patients' anxiety and negative mood, and increases positive mood and satisfaction, compared to negative affect-oriented communication, (2) the communication of positive outcome expectation by the physician decreases patients' anxiety and negative mood, and enhances outcome expectancy and self-efficacy compared to an uncertain expectation (3) there is an interaction between affect-oriented communication and expectations: positive affect-oriented communication increases the effect of expectations, while negative affect-oriented communication reduces these effects.

## 2. Methods

### 2.1. Experimental videos

In a $2 \times 2$ RCT design, videotaped simulated consultations produced as part of the previous study were used [29]. These videos varied from one another in one element of physician's affect-oriented communication and one element of inducing outcome expectations: (1) affect (+: positive; warm, empathic; versus−: negative; cold, formal), and (2) expectation (+: positive outcome; versus−: uncertain outcome). Two independent coders rated GP's communication with the Roter method of interaction process analysis (RIAS) [32] to assess whether the videos truly differed in communication. Four videos of the 30 videos were selected that showed a maximum heterogeneity in the two manipulated communication elements.

The videos depicted medical consultations in which a volunteer patient presented real menstrual pain disabling her daily activities to an actual, female GP. The volunteer patient received a script about the presented problem, and the GP was trained in the different communication styles. The GP asked about patient's menstrual pain and complaints, gave recommendations about medication (i.e. the use of non-steroidal anti-inflammatory drugs; NSAIDs) and further possibilities to prevent pain. Due to the scripted role-playing approach, there was a high control over the GP's communication.

The positive affect-oriented videos showed a warm and friendly GP, opening in an inviting manner, showing empathy ("This must be very difficult for you", and "I noticed that this problem put quite a strain on you"), addressing the psychosocial context of the patient, and directing eye contact and body posture toward the patient. In the negative affect-oriented videos the GP acted rather cold and formal: the GP made no empathic statements, did not further explore, or was ignorant to, patients' expressions of emotions, showed to be easily distracted, a diverted body posture, and only briefly looked in the direction of the patient, while frequently looking at paperwork [29].

In addition, all videos included either a positive or uncertain outcome expectation. In the positive expectation videos, the GP praised the effectiveness of NSAIDs in reducing menstrual pain ("This medicine works for a lot of women", and "I'm sure that you will benefit from it too"). In the uncertain expectation videos the GP also mentioned the use of NSAIDs, but commented that its effect on menstrual pain is uncertain ("I'm not sure whether this will help you much") [29]. NSAIDs are used to reduce menstrual pain or cramps, and the GP prescribes a maximum daily dosage of 2400 mg.

Participants in our study were randomly assigned to view and judge one of the four videos. Group 1 viewed the +affective/+expectation video (length: 9.98 min); Group 2 the −affective/−expectation video (length: 8.34 min); Group 3 the +affective/−expectation video (length: 7.35 min); and Group 4 the −affective/+expectation video (length: 7.22 min).

### 2.2. Study sample

Participants were recruited by information leaflets at various locations i.e. waiting rooms at health centres, pharmacists, local supermarkets, gyms, (university) libraries, community centres, via calls in women's magazines and newspapers, snowballing procedures, and via Internet, forum boards, and social media. Inclusion criteria were being female, having a menstrual cycle and suffering from menstrual pain at least once in the last six months, aged 18–45 years, and having sufficient command of Dutch. Data were collected between February 2013 and June 2013.

Participants took part as analogue patients (APs) and were instructed to identify with the video-patient, while viewing and judging the consultation. More specifically, they were instructed as follows: "You will be watching a video-taped simulated consultation. While watching the video, place yourself in the position of the video-patient while imagining how you would feel if you were in this consultation". APs have been used in several studies reporting representative [12,29,33] and valid measures [34,35] of clinical patients. To optimise validity, studies recommended matching APs and clinical patients on characteristics such as age and gender. Therefore, we only included women in a reproductive age (between 18 and 45 years of age), who reported to have a menstrual cycle and suffering from menstrual pain to maximise empathic involvement between APs and the video-patient and to minimise confounding gender effects. We estimated a priori, based on the effect size of the State Trait Anxiety Inventory (STAI-S) [36] from a study using similar experimental methodologies, [37] that a sample size of 309 women would attain 80% power for determining two main effects and one interaction effect at $p < 0.05$.