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Placebo use in pain management: The role of medical context, treatment efficacy, and deception in determining placebo acceptability

Nkaku Kisaalita [a,b], Roland Staud [d], Robert Hurley [c], Michael Robinson [a,*]

[a] Department of Clinical and Health Psychology, University of Florida, Gainesville, FL, USA
[b] Department of Psychiatry and Health Behavior, Georgia Regents University, Augusta, GA, USA
[c] Department of Anesthesiology, University of Florida, Gainesville, FL, USA
[d] Department of Medicine, University of Florida, Gainesville, FL, USA

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ABSTRACT

Placebo effects can act as powerful pain relievers. Although the ethics of therapeutic placebo use are highly controversial, recent evidence suggests that medical providers frequently utilize placebo treatments and patients may be open to these interventions in certain contexts. This investigation used a patient-centered approach to answer essential questions about placebo treatment acceptability. People with chronic musculoskeletal pain completed a placebo survey in which they rated their knowledge of placebo and its efficacy for alleviating pain, evaluated the acceptability of placebo analgesic interventions across several unique medical contexts, and responded to 6 different patient–physician treatment scenarios to assess the role of deception and placebo effectiveness on mood and provider trust. Results showed that participants had limited knowledge of placebo and its efficacy for alleviating pain. Placebo acceptability was highly dependent on the context of the intervention, as placebo treatments were considered acceptable when used as complementary/adjunct treatments and when no other established treatments were available. Also, an analgesic placebo response mitigated the negative consequences of deception by improving provider trust and decreasing negative mood. These findings suggest that, contrary to popular belief, patients may be rather pragmatic in their appraisals of placebo treatment acceptability, and may consider a variety of treatments/contexts as ethically permissible for managing their pain. This is the first study of its kind to quantify perceptions of placebo analgesia knowledge and efficacy among individuals with chronic pain, and to assess the role of different medical contexts in treatment acceptability.

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1. Introduction

The effectiveness of most medical interventions is derived partially from contextual or nonspecific factors, commonly referred to as placebo effects [12]. These effects have demonstrated remarkable potency for the alleviation of pain, and under certain circumstances, placebos have produced effect sizes indistinguishable from established medications [24,42], surgeries [30], and other analgesic treatments [25,40,43]. With clearly defined neurobiological [2,31] and psychological [7,32,37] underpinnings, the placebo analgesic response is one of the most well-understood models of placebo [8,17,34].

Despite considerable advances in understanding placebo mechanisms and effects, debate persists regarding the acceptability of therapeutic placebo use [28]. Whereas the ethics of placebo-controlled/randomized-controlled trials (RCTs) have been well established [11,22,27,44], the placebo treatment debate continues to incite disagreement among health care providers, bioethicists, and researchers [4]. Interventional placebo use opponents tout a variety of arguments, including that placebo use would damage the provider–patient relationship and/or cause psychological distress [10]. These arguments are primarily driven by placebos' association with deceptive means and presumed negative consequences of deceiving patients [29]. Medical associations rarely adopt policies/guidelines regarding clinical placebo use, although some organizations prohibit covert use [3]. However, health care providers frequently use placebo interventions, often unbeknownst to patients [13,14,18,26,39].

* Corresponding author at: Department of Clinical and Health Psychology, University of Florida, PO Box 100165 Health Sciences Center, Gainesville, FL 32610-0165, USA. Tel.: +1 3522736153.
E-mail address: merobin@ufl.edu (M. Robinson).

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Recent research has challenged the claims of placebo use opponents. A survey among primary care patients revealed that most were amenable to placebos despite the use of deception [5]. Furthermore, among both a nonclinical sample and irritable bowl syndrome (IBS) patients, placebo use had no adverse effects on mood nor the strength of subsequent placebo responding, even after the use of placebo was disclosed to participants [6]. Additionally, an explicit, open-label placebo RCT for IBS patients produced large and clinically meaningful reductions in IBS symptom severity [19].

Our research group has extended this line of inquiry by examining attitudes toward placebo use in nonclinical populations. In one study, participants responded to various scenarios of patients receiving placebo treatments to alleviate pain [21]. These scenarios systematically varied the severity of the patient's pain, the deceptiveness of the provider's description of the treatment, and the intervention's effectiveness. Results illustrated that, although participants viewed placebo interventions as deceptive, their perceptions of placebo acceptability were mitigated by beneficial treatment outcomes. These findings were supported in a subsequent survey exploring placebo analgesia knowledge and acceptability [20]. This study also illustrated that lay individuals were uncertain about placebo analgesia efficacy and harbored rudimentary conceptualizations of placebos.

The present investigation seeks to further the understanding of placebo analgesia acceptability through utilization of an established patient-centered survey methodology [20,21] in a chronic musculoskeletal pain syndrome sample. The aims of this study were to examine patients' knowledge of placebo, to explore the role of medical contextual factors in appraisals placebo acceptability, and to understand the role of deception and treatment effectiveness in attitudes toward placebo analgesic use. We hypothesize that, despite having limited knowledge of placebo, placebos will be deemed acceptable by chronic pain patients under certain circumstances. Additionally, we hypothesize that improved pain outcomes would mitigate the negative consequences of deceptive placebo use.

2. Methods

2.1. Subjects

Subjects were directly recruited from 2 university outpatient medical clinics as well as through flyers posted in the surrounding community. Participants were 57 adults with chronic musculoskeletal pain (40 females, 17 males; mean age = 45.12, SD = 19.16). Study inclusion criteria were: adults age 18 years or older, the ability to read English fluently, the presence of musculoskeletal chronic pain that has lasted at least 3 months, and internet access to complete the internet-based study. Exclusion criteria included the diagnosis of cancer or any other nonmusculoskeletal chronic pain etiology (eg, neuropathic pain).

2.2. Procedure

The present study was reviewed and approved by the University of Florida Institutional Review Board. Informed consent was obtained electronically. Before commencing the study, participants were informed that study participation would involve assessing their attitudes toward and knowledge of novel treatments for pain, such as placebo, and would involve completing questionnaires about their pain and their thoughts about pain treatments. The stated goals of this line of research were to help develop better ways to manage chronic pain in the future. The online questionnaire took approximately 30 minutes to complete and responses were anonymous. Participants were provided the URL/internet address for the study in addition to a unique login username and password. The internet-based survey was composed of 3 sections: (1) Placebo Knowledge, (2) Placebo Acceptability, and (3) Treatment Scenarios.

2.3. Measures

2.3.1. Placebo knowledge, conceptualization, and efficacy

All survey outcome measures were rated using visual analogue scale (VAS) ratings producing numerical values between 0 and 100. Anchors for individual VAS questions can be found in Tables 1 and 2. VAS ratings have demonstrated considerable reliability and validity for the measurement of pain and other subjective phenomenon [23,35].

The Placebo Knowledge section is a modified version of a previously published internet-based survey [20]. Participants were asked to give VAS ratings of the following: perceived knowledge of placebo analgesia, conceptualization of placebo, perceived effectiveness of placebo for reducing pain, and placebo analgesia treatment acceptability.

Placebo knowledge was assessed using a VAS rating from no knowledge to the most knowledge imaginable; participants were asked to conceptualize placebo along a VAS continuum from something completely inert to completely active. The perceived effectiveness of placebo treatments for pain was rated from completely ineffective to completely effective.

2.3.2. Placebo acceptability

Placebo analgesia treatment acceptability was assessed through VAS ratings of 6 questions: how acceptable would it be if a physician (1) overtly or (2) covertly administered a placebo treatment for pain; (3) how acceptable would it be if a physician used a placebo as a treatment enhancer or an adjunct treatment; is it acceptable for a medical provider to treat pain with placebo for a condition for which there are (4) other established treatments or (5) no other established treatments; and (6) is it acceptable for a medical provider to use a placebo to determine whether a patient's pain complaints are "real." VAS anchors were completely unacceptable and completely acceptable.

2.3.3. Deception, trust, and negative mood

The Treatment Scenarios represented a modified version of a previously published placebo survey [21]. The survey was composed of 6 different hypothetical scenarios, each portraying a clinical encounter in which a patient sees a physician for pain management and subsequently receives a placebo. Our sample of chronic pain individuals was asked to review each hypothetical scenario and to respond as if they were the individual receiving the placebo intervention. After viewing each scenario, our participants responded through VAS ratings of the following: (1) the deceptiveness of the hypothetical clinical encounter/placebo intervention, (2) their level of trust in the prescribing physician, and (3) the amount of negative mood they would experience if they had received the placebo treatment for their pain.

Two factors varied per scenario: (1) the health care provider's description of the placebo intervention and (2) the outcome/effectiveness of the treatment. Two distinct treatment descriptions were intended to be experimental manipulations of deceptiveness: for the high deception/enhanced placebo scenarios, the hypothetical patient in the scenario was informed that they will receive "a treatment that has been shown to be a powerful analgesic in some people"; for the low deception/random assignment instructions, the patient in the scenario was informed that they will receive either a "standard drug treatment or a placebo treatment" to manage their pain. Although the enhanced placebo description was once proposed to be an ethically acceptable description of a placebo treatment, more recent evidence has shown that it is