

The Sociocebo, Socioebo, Or Socebo Effect

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Abstract

The impact of the surrounding social ecosystem on the wellbeing of an individual is well known. Based on this concept in the brief article we propose a novel term called the socebo effect, which may be defined as the positive impact that occurs secondary to a change in the psychological factors associated with disease, the physician, the person-physician interaction, and/or the public and its healthcare ecosystem. These social comforters act as non drug interventions that help to improve the overall health related quality of life of a given individual. The socebo construct needs to be studied objectively, in both acute and chronic disease, including diabetes and obesity.

Keywords: Chronic disease, nocebo, placebo, psychosocial aspects, social pharmacology

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Introduction

The concept of placebo and nocebo effects is an integral part of pharmacology and clinical medicine. Earlier, placebos were defined as inert substances used in clinical trials to assess and compare the efficacy of newer drugs.¹ An understanding of the “context” of therapy has led to a more comprehensive definition. Placebo and nocebo effects are now defined as the positive and negative effects due to the administration of a treatment (be it real or simulated) in a therapeutic context.² This definition includes the symbols, rituals and cues that accompany patients during their health care experiences.

Biological backup

Neurobiological studies have shown that inert treatments activate endogenous opioid and endocannabinoid system. These may act as a “cofactor” or “secondary messenger” for placebos, by influencing desire for

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improvement, and belief in prescribed therapy.² The expectation of relief may be mediated by oxytocin and vasopressin-related pathways.^{3,4} Neuroimaging studies have revealed that expectation of pain, and perception of pain, are distinct processes which involve activation of different parts of the brain cortex.⁵

Researchers have highlighted the psychosocial factors that influence placebo effect. The patient-provider relationship, expectation of recovery (modulated by verbal instruction, observation, conditioning), and characteristics of the treating physician (warm, friendly, active listener, empathic, confident) influence response to pain.⁶

Social spectrum

Most research on placebos has focussed on analgesia, or on short term outcomes. Chronic disease research also includes a placebo control arm in most randomized controlled trials. Few authors, however, focus on socially transmitted placebo effects. The effect of provider expectations of treatment success on the pain relief experienced by patients has been described.⁷ Psychosocial health, such as patient loneliness or social isolation, has been postulated to influence placebo response.⁸ In fact, a bidirectional link between placebo treatment and social trust has been postulated. Placebo use has been shown to facilitate social trust and approach behaviour. As an example, they share evidence that placebo treatment makes single males stay closer to an attractive first-met female, and perceive less social anxiety in the female.⁹ Placebo effects may be mediated by oxytocin, which is fueled by social interaction.³ Social factors can also trigger neurobiological pathways to enhance sports performance, even in the absence of a tangible placebo preparation.

Social psychology lists three factors that may enhance the placebo effect. These are priming, client perceptions, and the theory of planned behavior.¹⁰ Social modelling also influences placebo response. For example, listening to a peer report adverse events after placebo administration increases the chances of similar symptoms in the index patient.¹¹ This phenomenon has also been described as observational social learning.¹² The advent of social media and artificial intelligence has added a newer dimension to the concept of social learning and placebo response¹³

Table: The socebo spectrum**Synonyms:**

- Value added therapy
- Therapeutic alliance
- Words of comfort
- Tender loving care

The public

- Public awareness re: particular disease
- Social marketing re: particular intervention
- Public perception re: particular intervention

The professional health care ecosystem

- Person-centredness
- Efficiency and efficacy
- Perception management

The physician

- Importance of disease
- Perceived reliability of intervention
- Perceived risk reward ratio of intervention

The person with disease/disability

- Perceived importance of disease
- Perceived trustworthiness of physician
- Perceived risk reward ratio of intervention

The Person-physician interaction

- Empathic communication
- Words of comfort
- "Glycaemic happiness"

The Person's Digital connection

- Digital therapeutics
- Artificial intelligence
- Exposure to health education and information

Examples of socebos

- Words of comfort/verbal language
- Analogies, metaphors, similes, proverbs
- Realistic optimism
- Planning for the future
- Social comforters
- Beverages, e.g., buttermilk, chamomile
- Spices, e.g., cinnamon, thistle
- Foods, e.g., roasted gram
- Activities, e.g., yoga, muraqabah
- Behaviours, e.g., social interactions
- Procedures, e.g., regular visits/interactions
- Artificial intelligence/Digital therapeutics
- Digital hand holding
- Artificial intelligence-based education

Chronic disease

Pain has been viewed as a biopsychosocial phenomenon which requires integrative research.¹⁴ This is equally true for chronic conditions such as diabetes and obesity, which are characterized by biopsychosocial determinants, biopsychosocial interventions, and biopsychosocial outcomes. A detailed metanalysis has shown that the placebo effect does not occur in diabetes.¹⁵ However, earlier authors have shown that patient education per se also has a therapeutic effect on glucose control.¹⁶ While it

may be argued that education is a 'mandatory' part of diabetes care, the quality of support, counselling and education varies from interaction to interaction.

We suggest that equal attention be paid, along with appropriate choice of pharmacotherapy, to social value addition in therapy. These means and methods must be implemented, as required, at clinical and public health level, to optimize response to standard of care therapy.

The sociocebo

We propose a novel concept that relates to the placebo effect, and term it the sociocebo, socioebo, or socebo effect. The socebo effect may be defined as the positive effect that is observed because of psychosocial factors related to the person with disease, the physician, the person-physician interaction, and/or the public and its healthcare ecosystem. These facets of the socebo are described in Table. Social comforters, i.e., non-drug interventions are also included in the definition of socebo. Our term does not include pharmaceutical preparations, and specifically excludes herbo-mineral preparations from alternative and complementary schools of medicine.

It must be ensured that the socebo prescribed has no interaction with pharmacological therapy. Examples include the potential of fenugreek water impairing the absorption of l-thyroxine or semaglutide,¹⁷ the possibility of sports- statin interaction, and the probability of electrolyte disturbance with salt-rich beverage, liquorice, and rock salt.

Summary

The social determinants of placebo response, and their neurobiological explanations are well known. Based upon these, we suggest the concept of sociocebo, socioebo, or socebo effects, in addition to placebo and nocebo phenomena. The socebo construct needs to be studied objectively, in both acute and chronic disease, including diabetes and obesity. The socebo response is greater than the effects noted with therapeutic patient education.

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