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THE IMPORTANCE OF DOMINANT HAND AT PLACEBO EFFECT OF INERT SPRAY TO MUSCULAR FATIGUE INDUCED EXPERIMENTALLY

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ABSTRACT

Keywords:

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Purpose: Placebo effect is a phenomenon where the patient's symptoms can be relieved by a false treatment in pharmacological aspects, most likely because of the patient expectations or believes that the treatment will have success. So, it is a psychological response to the treatment, without being accompanied by the improvement of physical condition. Placebo is often defined as: "Substance or procedure that objectively has no activity (effect) to the state that is treated²", but although inert substance has resulted on the improvement of the patient. In fact, we are dealing with a general term of a many different effects that cause people to re-interpret the disease and its symptoms. Curiosity of our study lies on the justification of high level spray usage as a pharmaceutical form to reduce the pain or muscular fatigue. We did it by using a spray that actually has no active pharmacological substance (neither analgesic nor muscular relaxation) while the voluntary tested people didn't knew about it.

Methods: A total of 50 individuals were subjected to research, each of them separately (unable to contact with each other). To the tested person is given a weight of 2kg in hand and is asked to do 25 flexion-extension of articulation cubiti - m. biceps brachii, while he holds in the slap of the hand the weight of 2kg. After the physical strains (flexion-extension), tested person estimates muscular fatigue-pain with a note from 0-10 (where 0-no fatigue and 10-maximum fatigue). Then is applied the inert spray on m. biceps brachii and after 30 seconds tested person reiterates assessment of muscular fatigue (with grades 0-10). As a rule we have decided that this procedure is firstly done on the right hand and then on the left one (no matters on the dominant side).

Results: In this research Placebo Effect resulted in 34 out of 50 tested individuals, that means in 68% of the cases Placebo Effect was evidenced at least once (in one of the hands or both of them). An interesting fact that we discovered was that Placebo Effect is more likable to happen on the left handed persons. 8 out of 50 were left handed and in 7 cases Placebo Effect was evidenced (87.5%), while at right handed persons (42 out of 50) PE was positive at 28 of them (66.7%).

Conclusion: Subject expectations on pain reduce may be a major factor in the therapeutic process and also on their real life too³. Every single health care professional must consider this factor on the therapeutic treatment toward his patients because as modern medicine advices patient beliefs are always crucial on having positive results.

INTRODUCTION: “Belief is powerful medicine, even if the treatment itself is a sham”⁴.

Now days we are living these times when using a medicine is one of the most normal things that can happen; in fact, a huge variety of pharmacological medicaments are being used (and sometimes over used) on all the possible known forms.

One can everyday see the huge amount of spray usage (as a pharmaceutical form) to reduce the pain or muscular fatigue at sports and sportsman’s. It is actually an unbelievable thing just to imagine a sports play or training without these “savior sprays” (analgesic, myorelaxant etc.). Sometimes, even a player wouldn’t play if he’d somehow knew that there’s no pain reliever spray waiting for him if he gets injured (you know, just in case).

Scientifically placebo is a pharmacologically inert substance that produces an effect similar to what would be expected of a pharmacologically active substance². With other words, placebo is the fake surgery or the fake therapies which do make patients feel better (for as long as they think that everything is going through the right procedures).

METHODS AND PROCEDURE: To the tested person is given a weight of 2kg in hand and is asked to do 25 flexion-extension of articulation cubiti - m. biceps brachii, while he holds in the slap of the hand that weight.

After the physical strains (flexion-extension) tested person estimates muscular fatigue-pain with a note from 0-10 (where 0 means no fatigue at all while 10 shows the maximum fatigue). Then is applied the inert spray on m. biceps brachii and after 30 seconds tested person reiterates assessment of muscular fatigue (with grades 0-10). As a rule we have decided that this procedure is firstly done on the right hand and then on the left one (no matter on the dominant side).

The spray is wrapped with a white cover so it’s improbable to see the written things on it (name etc).

Other important fact that were considered during the study:

- There were never made a suggestive question toward the tested person.
- The tested person is induced to answer just the questions that we propound
- Every individual subjected to research did it separately (unable to contact with others)
- The tested person is told precursory about the procedures that are about to follow throughout this study, but he’s not told about the reasons of our action (except for the fact that this is a scientific research, harmless to him and his health, conforming the rules and medical standards, and with the approvement of the ethical commission). The reasons of our actions can be reveal to the tested person (always if he insists) after the ending of the hole scientific research
- The tested person can not (by any chance) have access on others data’s – results.

Ethical considerations: This experiment has never put in hazard any of the participants that took part on it.

This experiment was subordinated to every local and international law, including here the conventions of human rights.

Participants: A total of 50 individuals were subjected to research, 16 of them were Males and 34 Females. There were 8 persons with the left side dominant (left-handed) and 44 with the right side dominant (right-handed). 30 individuals of our research do live in urban places and the rest 20 live in rural places.

Equipment:

Inert spray – a random one, with no pharmacological effect, without cold effect or any other substance that in one or another form can reach analgesic, anesthetic or myorelaxant effect

2kg weight - simple 2kg weight, cylindrical, produced to be grabbed on palm of the hand.

A blank paper and a pen – to register data

RESULTS: According to the general knowledge about placebo, there isn't any evidence about its distribution toward the dominant hand². All the researches on this theme are made just to proof the presence of placebo effect, and eventually the percentage of its presence.

In this research Placebo Effect resulted in 34 out of 50 tested individuals, that means in 68% of the cases Placebo Effect was evidenced at least once (in one of the hands or both of them) (fig. 1).

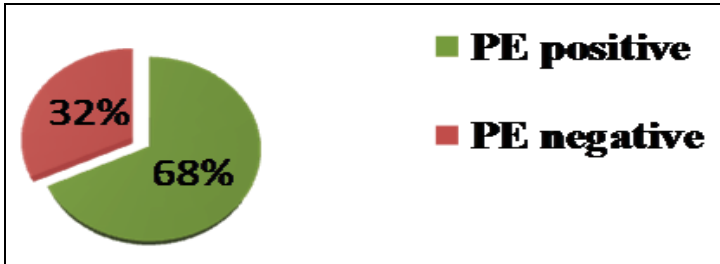


FIG. 1: OVERALL DISTRIBUTION OF PLACEBO EFFECT

An interesting fact that we discovered was that Placebo Effect is more likable to happen on the left handed persons. 8 out of 50 were left handed and in 7 cases Placebo Effect was evidenced, while at right handed persons (42 out of 50) PE was positive at 28 of them (fig. 2).

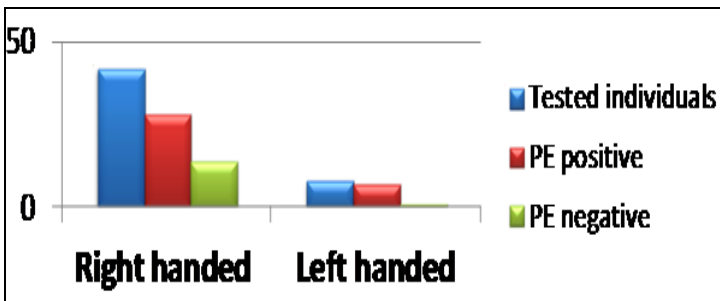


FIG. 2: PLACEBO EFFECT DISTRIBUTION ACCORDING TO DOMINANT SIDE

Placebo was found at 87.5% of left handed persons, while it was just 66.7% at right handed ones (fig. 3).

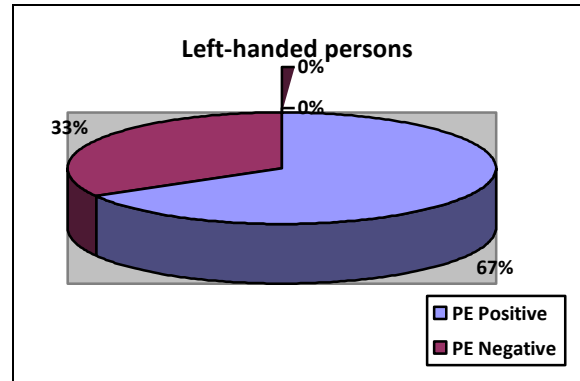
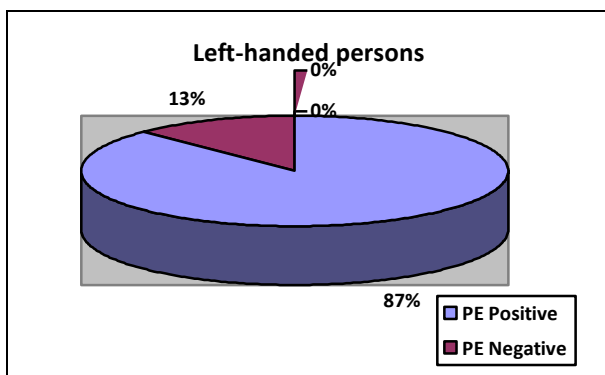


FIG. 3: PLACEBO EFFECT IN PERCENTAGE AT LEFT HANDED AND RIGHT HANDED PERSONS

CONCLUSION: This research was made to discover one of the paradoxes of contemporary medicine. If we re-check the facts and the statistics we can convincingly say that on the majority of cases mankind is cured when he wants to be cured.

On the other hand, we have opened the possibility that the dominant hemisphere of brain doesn't just dominate the opposite part of its body, but it also can affect the level of psycho-social development.

We truly believe that this subject will be particularly researched and developed on the future.

DISCLOSURE: The authors report no conflict of interest in this work.

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