



PSYCHO-MEDICAL ERRORS THAT INFLUENCE ADHERENCE TO TREATMENT AGAINST A PANDEMIC: WHY DO WE NOT GET VACCINATED?

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Abstract

Adherence to treatment is a factor that conditions therapeutic success. A major problem of the last two years is the hesitation regarding vaccination and the few explanations related to this reality, in a context in which the treatment is widely available. In this article we aim to investigate the phenomenon of adherence to immunization against SARS-CoV-2, emphasizing the importance of the cognitive approach that underlies the decision to get the vaccine and highlight some possible causes of hesitation related to vaccination. Moderate persuasion accompanied by a correct logical substantiation of pro-vaccination arguments can be mentioned as important factors that contribute to adherence success in the current pandemic context, but these have been insufficiently documented in strategies to influence/persuade the population.

Keywords: adherence; treatment; argumentation; substantiation; rationality

Introduction

The World Health Organization described the spread of SARS-CoV-2 as a pandemic on March 11, 2020, with the most severe measures being globally implemented to prevent the spread of the virus (WHO, 2020). In the absence of knowledge regarding the mechanisms of the disease caused by the SARS-CoV-2 infection and, implicitly, of the treatments needed to cure infected cases, many people lost their lives, while many survivors were left with long-term

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complications of the disease. A vaccine as a measure of prevention, and etiological treatment were far from being achieved, so that the number of illnesses and deaths increased significantly in several waves of the infectious process globally. However, the emergence of the immunization possibility through vaccination has led to a variety of pros and cons at the individual and community level on the one hand, and on the other hand, it has led to the diversification of health policies to encourage vaccination as the only therapeutic measure with real potential at the moment (Detoc et al., 2020; Larson et al., 2016). Despite the global media coverage of the high risk of Covid 19 infection, a significant percentage of the population has been and is sceptical, either temporarily or persistently, of the effectiveness of vaccination, so that vaccine hesitancy is becoming widespread worldwide (Fisher et al., 2020). Thus, there is the issue of adherence to treatment and the factors that influence patients' attitudes towards prescribed treatments.

Approaching the 20th century from a medical perspective, the new treatments and therapeutic methods discovered, the advances related to the diversification of antibiotics, antifungals, and vaccines can be considered among the important factors of increasing life expectancy. The prevalence of vaccine-preventable diseases, for example, may be significantly reduced as a result of poor adherence to scientifically confirmed therapeutic programs (Rey et al., 2018). However, we cannot talk about the success of medicine therapies without identifying the factors involved in adherence to discovered treatments and the role of this factor in therapeutic success (Lazaro et al., 2019). The causes of hesitation regarding some discovered treatments remain insufficiently determined. SAGE (Strategic Advisory Group of Experts) working group on vaccine hesitancy has defined this as the refusal of or delayed acceptance of being vaccinated despite availability (MacDonald, 2015).

Disease control can be done through preventive or interventional strategies, which, the sooner they occur, the greater the chance of therapeutic success. When interventional treatments are available, the degree of their acceptance varies at the individual and community level, as there are many factors that contribute to the decision-making process. The hesitation related to accessing a treatment can be explained by the contribution of several factors. Low educational levels, beliefs about the effectiveness of certain treatments, fear of adverse effects of a treatment (Chou & Budenz, 2020), adherence to groups/subcultures that promote alternative therapeutic methods, media (the

internet), rumours or conspiracy theories are just a few factors that influence accessing or refusing a treatment (Kuru et al., 2021). At the same time, there are people who simply want more information about the impact of that treatment in order to make a decision. The lack of this information or its insufficiency can contribute to the delay or refusal to accept a treatment.

The information regarding the pathology given by SARS-CoV-2, according to a metanalytic research, found that the quality level is inferior compared to the average prestige of the publications in which they appeared, thus demonstrating a deficit related to the knowledge of this pathology (Zdravkovic et al., 2020) and of methods to withstand it. However, the stimulation of the adherence to a certain treatment is achieved on the one hand, by providing complete information regarding its effectiveness, and on the other hand, by procedural aspects of its administration. Fear of side effects is considered a major factor for hesitation regarding vaccination. Rumours and conspiracy theories contribute to poor adherence to immunization (Jolley & Douglas, 2014).

Medical services are provided in most countries through national or private programs. People's scepticism about adherence to a treatment, however, is known not only at the individual level, but also at the community level. According to the WHO, vaccine hesitancy is nominalized one of the 10 major health threats worldwide, with negative medical, economic and social impact (Schuster & Duclos, 2015). Therapeutic adherence could improve the economic and social problems caused by the disease and could contribute to the intensification of research related to further treatments.

The communities of people attentive to medical information are reluctant towards such information also as a result of the hyper-persuasive attitude of the medical staff regarding vaccination and excessive focus on threatening (dangerous) examples of cases of Covid 19 pathology in the absence of vaccination. The low confidence in medical staff due to the high rate of medical failure together with their hyper-persuasive behaviour towards vaccination may also contribute to the postponement or refusal of vaccination. The tendency to violate individual freedom through hyper-persuasion has led in many communities to reluctance or opposition to vaccination, leaving room for interpretations/attitudes that have led to distancing themselves from the medical act of vaccination. Sometimes people like to have a personal reason to decide on a behaviour that directly affects them and they want to choose that behaviour independently. The more intense the persuasion, the sooner the opposite effects

may occur, because the feeling of restricting personal freedom occurs. The phenomenon can be perpetuated by the desire for consistency related to the decision taken, increasing the hesitation regarding the proposed treatment. At the same time, the possible costs of the negative implications of the vaccination decision are perceived as more difficult to tolerate than the possible costs of omitting the vaccination, due to the difficulties of tolerating the negative consequences of voluntary decisions. This is the omission bias. Denying the negative implications of the disease by lowering the chances of becoming ill can diminish the therapeutic commitment. A person's engagement is more effective if it is active, public, and demanding effort, compared to other methods of influencing (Lakhani, 2009). So, adherence to treatment is stimulated by moderate persuasion, by respecting individual freedom and encouraging commitments that involve the conscious involvement of the individual.

Rational approach to therapeutic adherence

The problem of adherence to treatments offered by specialized services is not new. It remains unknown to some extent, despite the medical and scientific advances in identifying etiological treatments (Napolitano et al.2015). The degree of adherence to treatment is estimated at 20-50%, being defined as “the extent to which a person’s behaviour (in terms of taking medications, following diets or executing life-style changes) coincides with medical or health advice” (Haynes, Taylor, & Sackett, 1979). The attributes of adherence include: the patient's degree of obedience, the ability to implement medical advice and perseverance in it, flexibility, responsibility, collaboration, participation (Rafii et al., 2014). Adherence to treatment is determined by the quality of the therapeutic relationship between the specialist and the patient, on the one hand, and by the amount of information that the patient has about the proposed treatment, on the other hand (Vermiere et al., 2002). Increasing adherence to treatment remains a current issue for health services.

The effectiveness of therapeutic interventions is influenced by the underlying scientific support. When we talk about scientifically validated treatments, we mention that there must be controlled clinical trials that show that treatment is more effective than previous or other competitive treatments, as demonstrated by reference to the placebo or control groups. The lack of this experimental evidence undermines the adherence to treatment of that category of

people interested in the proven quality of the effectiveness of a treatment to be applied.

Of course, there are also scientifically pseudo-validated treatments, which refer to the fact that current practice proves their effectiveness. However, they are dismissed by the absence of controlled clinical trials comparing several types of interventions/treatments on different experimental groups, all in relation with the control or placebo groups. The risk of these treatments is not sufficiently quantified, the long-term impact of the treatments and the associated vulnerabilities, and the ways of managing them are not precisely known. These treatments benefit from variable adherence, giving way to the human tendency to fill a gap with information where it does not exist, in order to solve the problem and gain coherence.

The inferences that appear in the absence of exact data are informational processing based on incomplete data, which give apparent coherence and lead to a state of psychological balance, by "solving the unknown". Inferences are not always rational (logical, consistent with reality, have applicability) so there is the possibility of irrational information processing (Ellis, 1994).

Irrational information processing can respond to the human need for coherence and predictability, but it can be maladaptive/dysfunctional, with negative consequences on proper functioning. So, to think in irrational terms like: *things have to be the way I want them to be, otherwise I don't accept them, it's awful that things happen the way they do, I have failed if I don't understand how things work* or *I can't stand not understanding clearly what is happening* leads to dysfunctional behaviours of avoidance, opposition, rejection, scepticism and emotional states such as anxiety, anger, depression, etc. which decrease the chances of adherence to treatment (Ellis, 2002).

However, the lack of scientific support for certain medical realities (scientifically pseudo-validated treatments) can be compensated by the rational approach to those treatments, which implies an accentuation of the cognitive component involved in the decision-making process. Cognitive processing is a complex and individual approach, which can be rational or irrational. People are prone to think irrationally, on the one hand due to a genetic predisposition, and on the other hand due to environmental conditions, perpetuated phylogenetically (Di Giuseppe & Dryden, 1990).

Irrationality presupposes rigid, absolutist thinking, low tolerance to minor frustrations, the catastrophe of negative situations and global, general evaluations

of people or of reality. In this way, we can identify cognitive errors, involved in maintaining irrational thinking, such as: emotional reasoning, overgeneralization, dichotomous thinking, labelling, personalization, minimization, minimalization, etc. (Marian, Roseanu, Tomulescu, & Pusta, 2008) which together cause dysfunctional emotions and behaviours and irrational decisions.

On the other hand, functional, rational thinking approaches reality in a flexible, adaptive way leading to acceptance of the fact that absolutism, intolerance to frustration, catastrophe and negative global evaluations are ineffective as strategies for approaching life. These are replaced by mental flexibility towards self and towards the others, tolerance of negative life experiences, approach of difficulties gradually based on a continuum of complications, analysis of behaviours and differentiation between a person as a global entity and their behaviours.

Concern for adherence to treatment brings another issue under discussion in addition to (a) information processing; (b) procedural knowledge: how can one do a certain thing?; (c) positive expectations regarding the benefits of that thing/treatment; self-efficacy, which emphasizes the idea of being confident that one can do something. Positive expectations about the effectiveness of a treatment go hand in hand with the level of scientific validation of that treatment. Arguments about the effectiveness of treatments must be solid, honest, reasoned, and explicitly present the disadvantages or less beneficial aspects of those treatments. In this way, both the argument and the counter-argument related to the effectiveness of some treatments are solved. The lack of a single component in this system leads to its vulnerability, with a negative impact on therapeutic adherence.

Effective argumentation of a treatment in order to stimulate adherence

David, (2006) identifies a model for substantiating a thesis/statement/idea (if a statement/thesis/idea contains an inaccurate term, errors arise that lead to ignoring the thesis, *i.e.*, low adherence or rejection of treatment). Below, there is a model for substantiating a thesis related to the effectiveness of medical treatments on appropriate pathologies:

- thesis to be substantiated: treatment X is effective against disease Y;
- means of substantiation: treatment X benefits from controlled clinical trials;
- substantiation process:

- inference rules: any X treatment that benefits from controlled clinical trials is effective for Y disease;
- justification of inference rules: according to the European Medicines Agency (EMA);
- modal operator: it is assumed that;
- the conditions for exemption of the modal operator: unless the clinical trials are not controlled.

The lack of a logical substantiation process undermines the authority of the thesis/statement/idea and leads to a decrease in adherence to the idea it promotes, by lacking precision in the substantiation process. The result is, for the rational population, low adherence to treatments or treatment refusal.

The discourses we hear about the effectiveness of some treatments need to be properly grounded in order to be effective in terms of adherence to them and in terms of persuasiveness. Both theoretically and practically, clinical discourses need to be accurate in order to be effective.

Another explanation for the lack of therapeutic adherence is the deficit in offering positive behavioural models that were successful with the respective treatment in a similar medical situation. However, such models must meet the representational characteristics of the people involved in the analysis. Offering unrepresentative models can lead to the opposite results of therapeutic adherence: rejection of treatment by the antithesis between the model and the particular case.

Conclusions

In this article, we aimed to mention some predominantly cognitive causes of lack of adherence to modern treatments for a pandemic. We emphasized the need to logically and correctly substantiate and argue for treatment-related statements that meet the cognitive and motivational needs of the subjects. The cognitive dimension is considered the foundation of the cognitivist approaches of the human psyche, highlighting a direct link between cognitive processing and human emotions or behaviours.

The specialized literature has few resources on the issue of adherence to treatments, and comparative studies are needed to investigate the psycho-behavioural mechanisms that lead to deficiency in therapeutic adherence.

In a pandemic context, the reality indicates a low rate of adherence to the current proposed treatment. There are many causes highlighted in the media, but

what they all have in common is the cognitive processing behind the decision to adopt or reject an existing medical strategy at a given time, either temporarily or permanently.

The mental process that underlies the adoption of a behaviour is a complex one and is conditioned by the coherence and the logic of the information subject to processing. Without an effective substantiation we cannot speak of optimal adherence. Hyper-persuasive, repetitive, persistent approaches that highlight the negative consequences of non-vaccination, approaches that eliminate or do not offer alternatives, relying on the emotional dimension of the decision-making process to the detriment of the cognitive one, are approaches that lead to low levels of adherence to vaccination. We must keep in mind that therapeutic success depends on 40% of the patient's personal factors (David, 2006). Therefore, the substantiation must take into account the fact that decisions are taken individually, as a result of a correct, complete or at least sufficient argumentation.

Persuasion is not enough in the decision-making process; it must be accompanied by scientifically validated arguments and rational and honest information related to a certain medical product. Regardless of the dangers of non-vaccination, first and foremost, concerns about vaccination are needed to stimulate adherence to it. Emphasizing the negative implications of non-adherent behaviour leads to the rejection of persuasion related to that behaviour. Thus, we face the postponement or refusal of the treatment that is insisted on. Moderate persuasion, accompanied by scientifically validated arguments about a particular treatment, stimulating active and rational engagement are effective methods of increasing therapeutic adherence.

The limitations of this research consist in the need to support the above statements with experimental clinical trials in the current context. There is a need to test the statements in the social context and to provide predictive patterns of behaviour related to the introduction of new medical treatments on the market.

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