

## **Mind-shaped body: A new conceptual framework beyond the placebo effect connecting expectations to disease outcome**

### **ABSTRACT:**

#### **Background**

Placebo and nocebo promote physical modifications by creating the expectation of a change through a primer (e.g., a fake pill). Expectations, however, do not need a primer to be created. Every person who receives a diagnosis develops his/her expectations about the course of the disease. This is the concept of “Illness Expectation” (IE), a cognitive schema that defines the future-oriented beliefs about the illness and the symptoms of someone with a chronic disease. These beliefs are both explicit and implicit, and they could be characterized by different degrees of rigidity.

#### **Aims**

The study aims to test the hypothesis that IEs affect illness symptoms. This is explored in the context of asthma, which is a debilitating respiratory disease, characterized by airway hyperresponsiveness, airflow obstruction, and chronic inflammation.

#### **Method**

Three-hundred twelve participants with asthma were assessed three times over 6 months, for asthma symptoms (Asthma Control Test), respiratory values (FEV1), and illness expectations, by using the previously validated “Illness Expectation Test”, which assessed both explicit and implicit expectations. The predictive values of illness expectations over asthma symptoms and respiratory parameters were measured with latent growth modeling and linear regressions.

#### **Results**

Longitudinal data analysis suggests a strong predictive value of explicit expectations over self-reported asthma symptoms ( $\beta=-.50$ ,  $se=.21$ ,  $p=.01$ ). Implicit expectations showed a similar pattern, with a trend toward significance ( $\beta=-.014$ ,  $se=.008$ ,  $p=.09$ ). Furthermore, the expectations of improvement or worsening of the symptoms over time strongly predicted changes in respiratory values ( $\beta=.51$ ,  $se=.11$ ,  $p=.001$ ).

#### **Conclusions**

Illness expectations predict symptoms progression over time in people with asthma. Specifically, explicit expectations about future symptoms strongly predict the subjectively reported asthma symptomatology. Interestingly, expectations about changes in symptomatology severity are strongly associated with the instrumentally assessed respiratory function. These results confirm the relevance of illness expectations in asthma progression and suggest a high potential for mind/body interventions.

#### **Keywords**

Illness expectations, Placebo, Nocebo, Mind-body, Asthma

**Published Work:**

Pagnini, F. (2019). The potential role of illness expectations in the progression of medical diseases. *BMC Psychology*, 7: 70. doi:10.1186/s40359-019-0346-4

Pagnini, F., Cavalera, C., Volpato, E., & Banfi, P. (2020). Illness expectations predict the development of influenza-like symptoms over the winter season. *Complementary Therapies in Medicine*, 50, 102396. doi: 10.1016/j.ctim.2020.102396

Pagnini, F., Volpato, E., Dell'Orto, S., Cavalera, C., Spina, M., & Banfi, P. (2021). Illness expectations assessment in people with asthma: A tool for explicit and implicit beliefs. *Journal of Asthma and Allergy*, 14, 449-455. doi: 10.2147/JAA.S307763

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