

Exercise and Stress Part III—The Psychosomatic Model

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Introduction

“Oh, stop worrying about his leg, he’s fine. It’s just psychosomatic.” Many times, people attribute decrements in performance or health to the psychosomatic model. Yet, this quote shows a complete lack of understanding of the model. First, it suggests that the decrement is all in the mind; however, it may not just be mental. Second, it is very dismissive, suggesting that mental disorders are easy to fix. Indeed, hundreds of studies are showing again and again that decrements to health due to the mind body connection are real problems (Simmons, 2006). In this context, the purpose of this paper was to define the psychosomatic model, and ways to deal with stress using this model.

The Psychosomatic Model

Many confuse the psychosomatic model with the disease hypochondria. Hypochondria is the unreasonable fear about ones health, accompanied by delusions of disease. For instance, people with hypochondria may turn frantic over the slightest pain, thinking it may be an indication of some horrible disease such as cancer, when it is nothing more than a bruise. However, the psychosomatic model is a real problem, and not just a delusion.

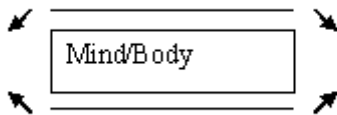


Figure 1.

The Mind Body Connection.

Figure 1 graphically depicts the connection between the mind and the body. The psychosomatic model describes the connection between the mind and the body, and the resultant effects on health and disease generated from this connection. Results indicate that mental stress is a contributor to ailments such as paralysis, certain cancers, ulcers, and hypertension (Simmons, 2006). In a review article on the biological processes in psychological stress, Haddy and Clover (2001) found that mental stress was related to an increase in various potentially harmful chemical substances, such as cortisol which degrades proteins, including white blood cells and antibodies, resulting in a decrease in immune function, and consequently, elevated

rates of sickness; and thyroxin, which causes an increase in cerebration (thoughts), which is one reason why people that are stressed often have sleeping disorders—because they are up worrying all night (Inouye, 2006).

A model often not considered, but equally valid, is the Somatopsychic model, which discusses the effects caused on the mind by the body. For instance, in a recent review article, Landers (2006, in press) found evidence that exercise can significantly reduce mental stress, depression, anxiety, and enhance cognitive function, among other benefits.

This model suggests that the mind body connection occurs through several steps; these steps will be discussed subsequently.



Figure 2

The Psychosomatic Model (Adapted from Wilson, 2004)

Figure 2 graphically depicts the Psychosomatic Model. First, a stimulus (such as food, cold, etc.) is introduced into the environment. Secondly, the individual brings the stimulus into the body (has perception of it). Cognitive Appraisal is a stepwise process. After perception of the stimulus, you compare the stimulus to past experiences and then select out a response, and benefit from the experience

(Sawyer, 2005). If you appraise the situation as being negative, then your emotional response will most likely be high cognitive anxiety, which is a negative emotional state. This emotional state would then drive the body (the supposed “link” between the mind and body; I say supposed, because evidence suggests all these stages are intimately linked between the mind and the body) to initiate physiological arousal, and a response, with the resultant effects promoting health or disease. It is important to understand that this model is not always linear. For instance, increased physiological arousal can directly effect perceptions or emotions, and perception can effect arousal.

For more on the physiology behind the psychosomatic model, such as brain structures involved, refer to Wilson (2004) [A Psycho Somatic Approach to the Initiation of Hypertrophic Stimuli](#).

The implications of this model are tremendous. By understanding these stages, we can intervene at certain steps, to influence the stress response. For instance, during a speech in front of hundreds of people (the stimuli and perception), one may feel threatened, as they are being evaluated (cognitive appraisal). One may respond with negative emotions, which leads to increased arousal and stiffness during the speech, impairing performance. However, the individual could intervene here at the appraisal stages, with positive self talk, which involves self persuasion (i.e. telling yourself you can do it).

Many instead use pessimism here, which has been demonstrated to decrease performance, and increase stress (Simmons, 2006). Pessimism can lead to Learned Helplessness. Zeligman (1975) reported that shocking animals no matter what they do, eventually resulted in them sitting down and taking the shock (learned helplessness). They later could not heal their mental sickness. Following this, the authors wrote many dissertations on the topic, and strongly urged scientists to never replicate an experiment which could cause such damage to animals. Yet, it appears many today are either unaware or did not take heed to this suggestion, because we replicate this same experiment in the work place on a daily bases! When we provide environments at work, where people get no reinforcement for their actions, and people themselves turn into pessimists, this can result in learned helplessness, where we simply give up, because it seems there is no way to solve our problems.

Contrary to this ailment, is the concept of learned optimism. As the book of proverbs says, “For a just man falleth seven times, and riseth up again.” This concept keeps a person pushing on, and focusing on positive things, no matter the set of circumstances. For instance, if it took you ten times to pass your drivers test, so what, you got it still, right? Interestingly enough, too much optimism will never make you sick—there is no such thing as being too happy (Simmons, 2006).

Summary

Evidence suggests there is a real connection between the mind and the body, and between the body and the mind, and both have effects on health and disease; these connections are referred to as the psychosomatic and somatophysis models, respectively. Thus, negative emotive states such as pessimism, can lead to a stress response, which can cause various diseases and impair performance. How to avoid these problems with specific interventions will be discussed further on in this series. To continue on to part 4, click [Here](#).

Keep it Hardcore,

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