

FIT Science and Health

Science is showing more and more that psychological factors play a key role in the cause of disease. Most diseases and illnesses, it seems are open to psychological influence. Why this should be so is less clear, although there is unambiguous evidence that psychological factors affect a whole gamut of biological markers, influence immune system functioning and interact with genetic predisposition. In the early 1990's Professor Fletcher's book 'Work, Stress, Disease & Life Expectancy' laid down the case for the key role of psychology in disease and life expectancy, although at the time had not formalised FIT Science. Of course, both physical and psychological health depends on exogenous or environmental factors to a large degree, but what is key is how personal psychology interplays and interacts with the way in which risks are expressed in disease and ill-health generally.

It is very difficult to research the causes of diseases, especially chronic diseases that are the leading causes of death nowadays. This is because so many factors are bound to be involved, the time course of many diseases before clinical symptoms show is so long, and most of the factors that do play a role will have interactive effects on each other. Thus, there are many factors that determine overall wellbeing.

In this context, this FIT Report takes a small first step to look at a possible role of FIT Science variables in physical illness. Various previous FIT Reports have provided evidence that FIT factors are linked to stress, anxiety and depression, but none have looked at any markers of physical illness. This study examined whether FIT factors might be linked to physical health either directly or indirectly.

The FIT Science framework offers a reliable way of measuring the person-based factors that could affect health. FIT is composed of two aspects that are important for determining how an individual thinks and behaves in different situations:

- *Outer FITness* or the repertoire of behaviours a person deploys — this is measured by looking at FIT Behavioural Flexibility.

- *Inner FITness*, which is measured by 5 cognitive Constancies (Awareness, Balance, Conscience, Fearlessness and Self-Responsibility). The composite measure of Inner FITness is the score on FIT Integrity.

Together, these FIT variables represent an individual's mindset, the way of thinking about, and approaching, situations. If FIT psychology is related to physical health outcomes we would predict that this would only be so for the 'thinking' or cognitive aspects of FITness.

The FIT variables are measured by a psychometrically robust and valid instrument — *The FIT Profiler*. This measure was used in the current research alongside a health questionnaire that assessed physical health problems during the previous month. An additional measure of psychological health was provided by a measure of anxiety - *The State-Trait Anxiety Inventory*. It is to be recognised that self-report measures of health are subject to many psychological influences and to establish a firm causal link between FIT and physical health would take a considerable amount of prospective controlled research. But every long journey starts with a first step in the right direction!

Participants

One choice to be made was who to get to participate in the study. It was decided that the strongest first test would be to use a group of healthy young adults, instead of older people with more potential problems to overcome. To this end, 96 young adults with an average age of 20.8 years took part in this study. Of these 82 were female.

Procedure

The participants completed three questionnaires. FITness, both Inner (Integrity) and Outer (Behavioural Flexibility) were measured using *The FIT Profiler*. Psychological health was measured using the *State-Trait Anxiety Inventory (STAI)*, as well as the stress scales in *The FIT Profiler*. This was to get both state and trait anxiety measures. State anxiety is short term or situational in nature, whereas trait anxiety is longer-term and more generally dispositional. A *General Physical Health Questionnaire (GPHQ)*

sought details of their physical health. This asked people to say which of the listed symptoms they had had during the previous month. A simple 'yes/no' response was required. The physical symptoms were headaches, stomach ache, flu, cold, coughs, sore throat, muscle aches, back pain, sleeplessness, fatigue, skin problems (rashes etc), constipation/diarrhoea.

Outcomes

There were a number of significant findings from this study:

The average number of physical symptoms reported per person in the preceding month was 5.1. As predicted, the results showed that people who were less FIT as measured by Inner FITness, (FIT Integrity scores) reported having had more physical illness and symptoms in the preceding month. This was shown by a significant and negative correlation between FIT Integrity level and score on the GPHQ (the Pearson's correlation, $r = -0.38$, which means there is less than 1 in 1000 likelihood that the observed link is due to chance - or to put it another way, the 'p' value is smaller than 0.0009). This relationship suggests that FITter people are less likely to experience physical health problems as measured in this study. To give some idea of the effect of higher FIT Integrity, the sample was split into two based on Integrity Score. The first group of 49 people with higher FIT Integrity scores (over 55/100) were compared with the 47 who scored less (less than 55). The difference in mean FIT Integrity of the 2 groups was just 14 (63 vs 49.2), but the higher FIT scoring group had a GPHQ mean symptom score that was 25% lower than the lower FIT scoring group (4.5 symptoms vs. 5.6 symptoms) and their trait anxiety scores were over one-third greater (33.8 vs. 46). Their Depression scores were also much lower too (7.7 vs. 9.7). These are big differences in outcome despite quite small differences in FIT Integrity.

The number of physical health symptoms reported over the preceding month from the GPHQ was also correlated with psychological health, as measured by the both the state and trait measures of anxiety in the STAI. The higher the scores on either measure of anxiety, the more physical symptoms were experienced (Pearson's correlations: state anxiety, $r = 0.22$, $p = 0.03$ & trait anxiety, $r = 0.21$, $p = 0.04$). This

confirms that both short- and long-term anxiety (or stress) has a negative impact on physical health. This result has been shown in much previous research on stress and health.

As we have reported in other FIT Reports, those people who score higher on Inner FITness measures report having lower anxiety levels. FIT Integrity negatively correlated with both state and trait anxiety scores (Pearson's correlations: $r = -0.68$, $p < 0.01$ & $r = -0.54$, $p < 0.01$, respectively). This is another clear indication that FITter people are less likely to experience psychological health problems such as stress.

Conclusions

These findings suggest that the way an individual thinks and makes decisions about their world has a potentially significant impact their physical health, as well as their psychological well-being. FIT Integrity had a direct and positive impact on both physical and psychological health and also an indirect effect on physical health via psychological health.

It is not possible to live in a world without demands and difficulties, or to be able to avoid the situations and life events that have potential negative health implications. However, by having higher levels of FITness people can learn healthier ways of thinking which may impact their long-term physical well-being. FITter people not only perceive life's demands and events as less stressful, they appear to be more protected from physical ill-health symptoms.

Perhaps the most important message to be taken from this FIT Report is that what happens to people in so many facets of life (and death) is within their span of control and effect. We do not need to be the passive victims of how we think and if we can improve Inner FITness, there is a chance that we will remove some of the barriers to a long and healthy life. Suffering the ravages of aging and disease is not just a matter of chance and genes. FIT Science offers effective tools for facilitating change that are short-term in length but may have long-term benefits. If improving FITness results in better health then accepting the challenge of improving your FITness can only be beneficial for all.