Healthy body, healthy mind?

NANETTE MUTRIE *on the relationship between exercise and psychological well-being.*

THE field of psychosomatic medicine has clearly established the idea that how we think and feel will affect the functioning of the body. What we do with our bodies may also affect how we think and feel, but this somatopsychic approach is less well established. This article aims to review what is known about the effects of physical activity on psychological function, and raise awareness of this research amongst psychologists.

Reaching a consensus

Recently an invited group of UK experts debated and critiqued the current knowledge of the effect of physical activity on psychological well-being. The group agreed on a summary of what is currently known, and this was published as a number of consensus statements (Biddle *et al*., 2000; Grant, 2000). This work recognises that physical activity has been consistently associated with positive affect, mood and psychological well-being in large-scale epidemiological studies and cross-sectional studies. Conversely, physical inactivity is associated with more negative emotions.

However, many of the correlation studies have been unable to unravel the problem of the direction of causality. Does feeling more positive encourage activity or does the activity result in more positive emotions? Experimental studies suggest that for untrained individuals moderate activity (such as brisk walking) will have a more positive effect on psychological well-being than more vigorous activity (such as running (Moses *et al.*, 1989; Parfitt *et al.*, 1994).

Evidence-based practical guidelines from health authorities (e.g. Grant, 2000) suggest that whether a person is exercising on their own or in a group setting, it is a focus on personal improvement, effort and mastery of the tasks that seem to have the most positive effects on mood and psychological well-being. This 'task orientation' is in contrast to 'ego orientation', in which exercisers seek to be better than others and where a competitive climate prevails. So maybe it really is the taking part that counts, not the winning!

Perceptions of our physical selves play an important role in our more global judgements of our self-esteem and are clearly linked to many behavioural issues, such as dieting and exercise. In the consensus statements, Fox (2000) has provided a systematic review that identifies 36 randomised controlled trials dealing with the relationship between physical activity and self-esteem. Positive changes in physical self-perceptions or general self-esteem were found in 76 per cent of all trials. It was concluded that exercise (both aerobic and resistance training modes) can be used to promote positive physical self-perceptions – but the mechanisms underpinning such changes are not clear. There was also reasonable evidence that cognitive function (such as reaction times) can be maintained or enhanced via regular physical activity, but this effect appears to be restricted to older adults. Finally, in the area of positive psychological benefits, Choi and Mutrie (1996) have described potential gains from exercise, such as improved mood and enhanced self-esteem, for women facing reproductive challenges including problems with menstruation, pregnancy and menopause.

Exercise 1 Depression 0

In terms of mental ill health the consensus statements rest upon epidemiological evidence, several meta-analytic reviews and key studies with robust design features. Effect sizes show that exercise has a low-to-moderate anxiety-reduction effect but a moderate-to-high effect on clinical depression. In addition, it was concluded that there is evidence to suggest a causal link between exercise and reduced depression.

Lawlor and Hopker (2001) have recently added to the available literature by conducting a very detailed systematic review of exercise as a treatment for depression. By averaging the findings from 14 studies they found that exercise produced a large decrease on depression scores (effect size 1.1) compared with no-treatment control groups, and that there was no difference between the effect of exercise and cognitive therapy. This appears to be extremely compelling evidence, but Lawlor and Hopker conclude that because of a paucity of good-quality research the effect of exercise cannot be unequivocally determined. This may be regarded as a somewhat negative interpretation of such strong effects, especially given the knowledge that, unlike drug therapy, there are very few negative side-effects and many additional physiological benefits that could be obtained from exercise.

WEBLINKS

Exercise Referral Systems: A National Quality Assurance Framework: *www.doh.gov.uk/exercisereferrals*

US Surgeon General's Report on Physical Activity and Health: *www.cdc.gov/nccdphp/sgr/sgr.htm*

Finally, the consensus statements also covered the potential dysfunctional effects of exercise, such as exercise dependence. While it is acknowledged that there are people who could be diagnosed with primary exercise dependence, it is also clear that this is an extremely rare occurrence; what may be more frequently seen is secondary exercise dependence – perhaps linked with eating disorders or body-image disorders such as muscle dysmorphia.

Despite the substantial literature on depression and exercise, there is an apparent reluctance from psychologists and psychiatrists to acknowledge exercise as a potential treatment mode. For example, in the UK, an overview of depression and its treatment did not mention the value of exercise at all (Hale, 1997). There is obviously much work to be done to convince those who deliver mental health services to focus on the links between body and mind and to look more positively on the role of exercise in mental health issues. There are other potential areas of mental illness that may be positively influenced by physical activity. These include schizophrenia therapy, alcohol rehabilitation and withdrawal from drugs. However, the literature in these areas is just beginning to build and no firm conclusions can be made at this time.

Finding out more

Biddle and Mutrie (2001) noted that the mechanisms of the antidepressant action of exercise are far from clear, although many plausible suggestions have been made. These mechanisms range from positive effects on self-efficacy and self-esteem, to neurochemical explanations such as increased levels of serotonin produced from physical activity. Clearly there is further research required to unravel the puzzle as to why physical activity and exercise should be associated with an antidepressant effect.

Other challenges to future researchers include the need for:

- further epidemiological evidence of the longitudinal relationship between physical activity and mental health;
- more randomised controlled trials of the effects of physical activity and exercise on mood, self-esteem and cognitive function across all age groups and both sexes;
- cost-effectiveness and cost–benefit studies of the use of exercise as a treatment mode for depression and other mental illnesses;
- randomised controlled trials of exercise versus drug treatment for depression in primary care and in psychiatric care;
- randomised controlled trials in the area of anxiety disorders;
- qualitative studies with patient groups (such as schizophrenia or those in drug rehabilitation) in which randomised controlled trials are difficult to conduct; and
- multidisciplinary research that addresses the issue of why there are positive psychological effects from physical activity and exercise.

This short article provides an up-to-date summary of what is known about the relationship between physical activity and mental health. There is, of course, a great deal that we do not yet know, but we should not to ignore the current knowledge that we have. Psychologists should consider the somatopsychic principle in their work.

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