
Does Primary Exercise Dependence Really Exist?

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In a previous review, I tried to distinguish between clinical exercise dependence that is secondary to an eating disorder and primary exercise dependence where the motivation to exercise is more complex (de Coverly Veale, 1987). It is well known to clinicians that eating disorder patients may use exercise as an alternative to dieting, vomiting or laxative abuse, and sometimes the preoccupation with exercise becomes the dominant clinical feature. However, careful interviewing will tend to reveal other symptoms, such as a morbid fear of fatness.

There are very few exercise-dependent patients who seek treatment and my clinical impression is that patients with secondary exercise dependence are far more common than those with primary dependence. Their problems are also more severe as they are likely to be underweight and malnourished and therefore more likely to have physical injuries or illnesses. The focus of my paper is on individuals who have primary exercise dependence.

I want to consider three questions:

- 1) *Does it really exist other than in a few case reports?* Even these cases have not had a standardized diagnostic interview and are open to debate.
- 2) *Does an eating disorder emerge after the exercise has subsided, as none of the cases have ever been followed up?*
- 3) *Can exercise dependence be properly distinguished from an over-training syndrome (Veale, 1991)?*

A syndrome of primary exercise dependence has not been clinically validated and there is no recognition of it as a diagnostic category in either ICD-10 (World Health Organization, 1994) or DSM-IV (American Psychiatric Association, 1994). Psychologists on this side of the Atlantic are not keen on diagnostic categories and prefer models that are based upon a continuum. A continuum undoubtedly occurs in exercise dependence as in all forms of psychopathology but both models are useful. Categorical models have a pragmatic value as well as medico-legal and other uses. In general, individuals only seek help from clinicians when they reach the extreme end of the spectrum - for example if they are sufficiently distressed or handicapped in their health, family, social or occupational functioning. A clinical definition of exercise dependence would assist in its recognition by physicians and stimulate further research into motivation. I offer the following updated operational

criteria which are in the style of DSM-IV or ICD-10 (see Table 1). They are based upon my clinical experience and a self-report measure of exercise dependence.

Table 1: Operational diagnostic criteria for "primary" exercise dependence

1. Preoccupation with exercise which has become stereotyped and routine.
2. Significant withdrawal symptoms in the absence of exercise (for example, mood swings, irritability, insomnia).
3. The preoccupation causes clinically significant distress or impairment in their physical, social, occupational or other important areas of functioning.
4. The preoccupation with exercise is not better accounted for by another mental disorder (e.g. as a means of losing weight or controlling calorie intake as in an eating disorder).

Individuals with primary exercise dependence do not tend to seek psychological help and are not generally referred to mental health specialists. This suggests that such individuals may: a) not be sufficiently distressed or handicapped in their physical health, family, social or occupational functioning; or b) deny that they have a problem or are "somatizing" their emotional distress; or c) have no confidence in the help that might be offered or even recognize that help could be available.

I have myself interviewed very few cases, despite having an interest in this area over the past eight years. I can only conclude that most of the time such individuals function reasonably well. Unlike a drug, there is never any shortage of exercise. Sometimes they overdose in the sense that they over-train and this leads them to experience chronic fatigue. In general, however, they adapt to their environment. For example, they may remain single or adopt partners who put up with their preoccupation. They tend to find employment that is physically demanding. They do not believe they have a problem because they have adapted their life to fit in with exercise but they remain vulnerable to cessation of exercise. They might have brief emotional crises if they have physical injuries and attend sports clinics and are advised to rest or reduce the intensity of the training. Informal talks with sports physicians suggest that such patients have great difficulty in complying with such advice and their recovery from a physical injury is prolonged. They do not however refer them on to a liaison psychiatrist or a sports psychologist. Occasionally they come to the attention of doctors when they continue to exercise through fevers or other illnesses and develop symptoms of chronic fatigue. Alternatively the patient may stop exercising but have a brief mood disorder during the enforced rest and withdrawal from exercise.

In summary, I believe primary exercise does exist but it is rare. There are probably many more cases with minor problems who have adapted their life to fit in with them and who never present. I will describe one case I have interviewed some time ago who would easily fulfil my operational definition and whom I would consider as a good example of "primary exercise dependence". I was able to use a standardized interview with her and hope to try to follow her up to see if she has ever developed an eating disorder.

She was a 27-year-old single unemployed woman who was a graduate in recreation management. She had responded to an advertisement in a local sports club requesting volunteers for a study of people who considered themselves addicted to exercise. She had not previously sought help for any emotional or behavioural problem related to her exercise. She was training to be a marathon runner and had a personal best time of 2 hours 40 minutes. Her weekly routine consisted of cycling 15 miles a day and twice-daily runs except on Sundays (average 14 miles) and Wednesdays (10 miles). She also did weight training twice a week.

When I saw her, the total amount of her running was not excessive but she had no other interests in life. She described her running as a compulsion ("I've got to do it"). She would experience withdrawal symptoms consisting of depressed mood, insomnia, restlessness, and indecisiveness when she had been forced to reduce her training because of an injury. She had once taken two overdoses in five days when she was withdrawing. She had presented to the Casualty Department but had not received any psychiatric help. She described her aims in life as "to run till I die" and to represent her country in the Olympics. One of the most striking aspects of her history was that she continued to exercise through back pain. On one occasion, she had run a marathon with a fever from German measles; on another occasion when she had a fever she had stopped after 16 miles. She had lost her partner because of her exercise and there were frequent arguments with her family about the amount of time she was spending exercising and the damage to her health. She did not work because it interfered with her training.

I used a standardized psychiatric interview which is divided into two parts (Goldberg et al., 1970). The first part is a systematic enquiry of any psychiatric symptoms which the patient may have experienced in the preceding week. The symptoms are rated on a five-point scale according to frequency and severity and are grouped in the following order: somatic symptoms, fatigue, sleep disturbance, irritability, lack of concentration, depression, anxiety, phobias, obsessions and de-personalisation. In the second section of the schedule, the interviewer rates the manifest abnormalities during the interview on 12 five-point scales. These are retardation, suspiciousness, histrionic behaviour, depression, anxiety, elation, flattened affect, excessive concern with bodily function, delusions, hallucinations and cognitive impairment. The patient had no overt psychiatric disorder and only scored highly on the item for "fatigue". She scored 14 on the Eating Attitudes Test (the normal cut-off score is 20 for an eating disorder). I also interviewed her with a structured schedule for eating disorders. Many athletes are extremely careful about their diet as leanness can improve performance. There was some concern about her weight and appearance as she tended to view herself as being too fat for a runner. She tended to skip lunch, was vegetarian and was careful about what she ate but she did not have a diagnosable eating disorder. She had a normal biochemistry, full blood count, and hormonal levels. Her periods were normal and she weighed 54kg.

Interestingly, there was a family history of depression in her mother and she herself had a past psychiatric history of depression at the age of 18. Her exercise could be considered as a means of preventing a recurrence of her mood disorder at the expense of her physical wellbeing. There is some evidence for exercise in the

regulation of mood but against this is that overtraining in athletes may itself lead to mood disorders (Morgan et al., 1988) and upset this delicate balance.

The question is whether a clinical syndrome of primary exercise dependence requires further exploration in a clinical study that identifies individuals who are exercise dependent and who do not have an overt eating disorder. A self-report measure of exercise dependence is currently being developed (Ogden et al., 1994). The Exercise Dependence Questionnaire consists of 29 items and eight factors: interference with social or family life, positive reward, withdrawal symptoms, exercise for weight control, insight into problem, exercise for social reasons, exercise for health reasons and stereotyped behaviour. The questionnaire has also been validated against the Eating Attitudes Test and the Profile of Mood States. Those subjects who scored more than 20 on the EAT reported significantly higher scores on the total EDQ score and on all factors except "exercise for social reasons" and "exercise for health reasons". It is planned to validate the questionnaire in a second population before it is published.

The Exercise Dependence Questionnaire (Ogden et al., 1994) and the 26-item Eating Attitudes Test (Garner and Garfinkel, 1979) could be used to explore this question by identifying four groups of individuals from a population of subjects who exercise regularly:

- (1) High EAT, High ED;
- (2) High EAT, Low ED;
- (3) Low EAT, Low ED;
- (4) Low EAT, High ED.

A sample from each category could then be interviewed blind using a standardized diagnostic interview for DSM-IV to determine the various diagnoses and characteristics of each group. A more detailed structured eating disorder interview may also be required to validate the EAT in such a population, as some people will argue that such individuals have a "hidden" eating disorder which would not be picked up on the EAT. In this regard in-depth questioning is required to reveal the motivation for exercise, whether the individual (or a close relative) considers that they are distressed by their exercise, whether the patient is handicapped in health, social or occupational functioning and whether they have considered requesting help. The EAT-26 is a screening inventory and has a cut-off score of 20 for a probable diagnosis of an eating disorder. The Exercise Dependence Questionnaire does not yet have a cut-off score as it has not been clinically validated and so it will be necessary to interview a range of higher scores and perform the analysis to determine the best cut-off. It may also be necessary to determine whether the individual has an over-training syndrome which might further complicate the picture.

Such studies present considerable logistical difficulties as recruiting individuals can only be done by appeals to the media. Respondents are likely to be based all over the country and some interviews may need to take place by telephone.

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