

Should I stay (still), or should I go (exercise) now?

A critical appraisal of both the negative and positive psychological effects that exercise could have on self-efficacy and depression.

The World Health Organisation defines optimum health as “the state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity” (WHO, 2022). However, whilst the physical benefits of exercise have been shown for quite some time, including a reduction in cardiovascular disease, improving sleep, and reducing the risk of type 2 diabetes (Scarborough, 2011. Reid, 2021) and early exercise adherence has been shown to be instrumental to healthy development within young people (American College of Sports Medicine, 1988), the psychological benefits – or potentially the lack thereof – remain under discussion. Therefore, it is in this essay that published research detailing the positive and negative links between exercise and self-efficacy and depression will be critically appraised.

In order to properly determine whether exercise or physical activity prescription is an appropriate intervention strategy for psychological benefit, it is arguable that the needs of those chronically experiencing conditions such as depression or lack of self-efficacy are best assessed on an individual basis. On the other hand, for general health recommendations made to those within the population potentially experiencing mental health conditions acutely, prior to any clinical diagnoses, it would be useful to see a discernible trend as to whether generalised exercise prescription is likely to alleviate, or exacerbate, symptoms.

When assessing psychological needs on an individual basis, it is important to consider how the condition to be treated could present itself; no mental health condition manifests the same way in everyone who experiences it (NHS, 2019). The very nature of a condition may affect an individual's perceived ability to engage in exercise or maintain a physically active lifestyle, and so to apply this context – as well as providing the support needed to improve an individual's self-efficacy – is certainly important in creating effective interventions and ensuring adherence to such.

Self-efficacy is the term used to describe someone's own assessment of their ability to perform tasks, that would in turn enable or hinder them in attaining certain performance goals. Within Self-Efficacy Theory (SET) this generally comprised of four main components (fig.1, Redmond, 2010)(Bandura, 1997):



Fig 1.

In addition to these four elements, it is possible that there a fifth element at play – Visualisation; the ability to visualise oneself already achieving the goal (Maddux, 1995) which can positively influence self-efficacy. Further study also discusses the idea that a certain level of self-efficacy can contribute to mental resilience and provide a measure of cognitive strength overall, therefore creating a positive chicken-and-egg cycle between self-efficacy and mental health improvement (Kolbe, 2009).

In terms of the effect self-efficacy has on exercise, a review conducted across 9 quantitative systematic reviews showed that increased self-efficacy had some effect on the likelihood to engage in, and adhere to, prolonged engagement in exercise (Sallis, 2000. Biddle et al, 2011). It is worth noting however that both positive and negative self-efficacy seemed to be a stronger influence in both instances amongst adolescent females, rather than in males of the same age or younger who showed a negligible link between self-efficacy and engagement with exercise, arguably showing that whilst self-efficacy can be a factor in the engagement within exercise, it may not be the only one of high influence – the review of systematic reviews showed that self-efficacy was just one psychological factor amongst several psychological, biological, and external correlating influences (Sallis, 2000, Biddle et al, 2011).

Within this review there has also been a distinction made regarding individual ideas of what it means to ‘succeed’; the basis of SET is a person’s own judgement of their competencies and therefore their ability to succeed, and so arguably this distinction could fundamentally change the meaning of the results as each individual could have a different interpretation of the question being asked (Nicholls, 1989). Such distinctions made in the definition of success are developed early on in life, and within those studied the definitions mainly fell within two categories: ‘Ego’ orientations based on a judgement of superiority of self over others (i.e. ‘success’ is defined as winning and has more extrinsic motivations), or ‘Task-orientated’ successes based on self-improvement (Sallis, 2000. Biddle et al 2003), with the latter being more strongly associated with the intrinsic characteristics that suggest a higher likelihood of adherence to exercise engagement (Biddle et al, 2003). Owing to the fact that extrinsic vs intrinsic ideas of exercise are developed in later childhood, the suggestion here is that the attitude and teachings of parents, schooling, and cohort are huge influences on attitudes towards engagement, potentially indicating motivating factors and the best approach for any necessary interventions (Sallis, 2000. Biddle, 2011)

Even though this review of reviews does show that self-efficacy influences engagement with – and adherence to – exercise, and therefore could offer some insight into the best approach from which to conduct interventions, the review itself is certainly flawed. Within this larger review there have been only nine reviews studied, and there is fundamentally not enough commonality between them all; there is a variance in how many correlates were studied across the reviews (some neglected to mention environmental influences, others socio-economic), and a lack of directly comparable age groups thereby skewing results slightly. Furthermore, there were also inconsistent methods used to gather data and inconsistencies in how data was analysed, additionally there was a lack of clarity in what each study classified as ‘physical activity’, and this larger review by Biddle was reviewing quantitative reviews predominantly written by Biddle, arguably allowing room for bias or lack of self-awareness.

In contrast to the somewhat positive link between self-efficacy and exercise shown in the review by Biddle et al, another report argues that someone’s Self-Efficacy can also be heavily influenced by contextual motivation e.g. whilst a young male may be physically capable of engaging with an activity such as ballet, they may be otherwise embarrassed by the activity itself and therefore incapable of engagement (Kirsch, 1995. Williams 2016).

Because of this, the argument made here is not to ask if someone is capable of something, but to instead ask them if they are even interested in engaging at all; planning an intervention to enhance engagement with exercise will be either helped or hindered by the individual's perceived positive and negative outcomes, that may not include 'success' in the activity itself, and so self-efficacy should only really be considered for interventions in conjunction with other motivational factors or even other psychological conditions that may influence motivation (Ajzen, 1985. Kirsch, 1995. Bandura, 1997. Fishbein, 2008).

Whilst this counterpoint of Self-efficacy needing a stipulation of 'if you wanted to' to be effective is arguably a valid point, there is very little evidence from other sources to reinforce the findings, and so further study is needed (Williams, 2016). There is also a lack of evidence regarding these findings with consideration for any underlying psychological conditions that may affect motivation, such as depression.

Depression can manifest differently in every individual who experiences it, and it can be both acute and chronic in longevity (NHS, 2019). The National Health Service explains that depression can be a blanket term under which multiple conditions such as Seasonal Affective Disorder (SAD), Manic Depressive disorder (or Bi-polar Disorder) and Postnatal Depression can reside under, all sharing some common psychological symptoms with Clinical Depression including (but not limited to) a lack of self-esteem, low mood or a feeling of hopelessness, a lack of motivation to engage in hobbies, and a distinct lack of ability to make decisions (NHS, 2019). In addition to the psychological symptoms there are physical symptoms such as unexplained aches and pains, constipation, disturbed sleep, irregular menstrual cycle, and lack of energy that can influence engagement with, and adherence to, exercise. Some with the condition may not experience all symptoms at once, some may not experience some symptoms at all. Due to the unique experience one can have with depression, a unique approach is often required in treatment interventions, including those involving exercise prescription.

In one such intervention study (Treatment with Exercise Augmentation of Depression, or TREAD) 12-week courses of aerobic exercise were used with a view to affect depression symptoms, first using the Snaith Hamilton Pleasure Scale (SHAPS) (Snaith, 1995) and Motivation and Energy Inventory (MEI) (Fehnel, 2004) to gauge the baseline affectedness of depression on individuals before beginning interventions, and ending the study using the Inventory of Depression Symptomology – Clinician Rated (IDS-C) (Rush, 2013) to gauge any improvement as a result of adherence (Toups, 2017). As a result of this study, the evidence showed that the exercise intervention did help those diagnosed with depression overall.

Despite the positive link to exercise found in the treatment of depression, the study conducted by Toups does have some negative points worth considering; the study does not state how many participants were involved in the study, it does state that all participants were adults ages between 18 and 70 years old, however this is a massive group and arguably a difficult one to draw comparisons within; a participant at 18 years old will have a very different experience of depression than someone of 70 years old will, even with the stipulation made that participants be on SSRI's for longer than 6 weeks but no more than 6-months, there has still been no mention of which symptoms the participants had in common either (Toups, 2017). Participant dropout was also a factor that wasn't expected by those conducting the study (Stubbs, 2016), arguably this is surprising given the nature of depression exhibiting symptoms such as lack of motivation, or an inability to make decisions, therefore hindering adherence to even engage with the study let alone adhere to exercise as a long-term treatment plan. Furthermore, the methodology is flawed; the measurement scales and inventories used are all self-report and therefore provide some

margin of error due to the result depending on proper reporting by the participant. Additionally, this particular study was funded by several pharmaceutical companies, the National Institute of Mental Health, and the National Institute on Drug Abuse, which does exhibit a conflict of interest.

In contrast to this, another study chose instead to focus solely on geriatric participants over the age of 65 (n=312), who showed more than 4 symptoms in common and had been diagnosed with depression of 'clinical significance' lasting at least 2 weeks (López-Torres Hidalgo, 2019). This study also lasted for 6 months – double the length of the study conducted by Toups in 2017. Despite this study also showing that exercise had a positive impact on mental health using a similar intervention of aerobic exercise, the participant criteria was much more specific, the participants themselves were more numerous, and the duration of the study was much longer. Arguably this makes the latter study more profound evidence than the former.

In the case of both Self-Efficacy and Depression, the evidence is clear that exercise and physical activity in any form does improve the nature and severities of the condition. In any study involving self-reporting of symptoms there will always be some margin of error, and some of the methodology seen here is undoubtedly questionable, but even so the evidence is still there in support of exercise as an intervention strategy. Whilst the actual engagement with exercise may be hindered or even prevented completely by the condition, or the apprehension experienced prior to engagement make exacerbate symptoms, the evidence is overwhelming in support of exercise as an effective treatment; there is currently no discernible evidence to say that engaging in exercise has any adverse effects on either self-efficacy or depression. Accordingly, my recommendation for future research is to use a much more specific demographic of people and for a longer period of time, similar to the study conducted by López-Torres Hidalgo; whilst the process would be longer and potentially more difficult (ensuring participants don't drop out over the duration of the study is a difficult feat itself), the end results are certainly more useful to any future interventions.

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This section details the *extent* to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills		
	10	
2. Knowledge and Understanding Skills		
	30	
3. Cognitive and Intellectual Skills		
	30	
4. Practical Application Skills		
	10	
5. Transferable Skills for Life and Professional Practice		
	20	

Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (tick if appropriate)		%
	Up to 1 week late (40% Max)		
	Over 1 week late (0%)		