

Psychological strategies to maximise fitness and enjoyment during exercise in senior Australians

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Summary

People become less active as they get older and senior Australians are the least active age group with more than half having low activity or sedentary lifestyles. A lack of physical activity can lead to serious mental and physical health problems. Conversely, increasing physical exercise increases quality of life, reduces risk of osteoporosis, lower back pain, muscle loss and cardiovascular disease, and alleviates mental health issues like depression and dementia. For reasons such as these, this project aimed to develop ways to help senior Australians increase their physical activity levels.

The federal government? recommends that senior Australians should do 30 minutes of moderate intensity exercise on most days. However, many do not do this. Some of the most common reasons for not being active include unpleasant feelings of effort and low enjoyment. What can be done to help people to enjoy exercise more? If we cannot change the exercise task, perhaps we can change the way people *approach exercise*. Exercise psychologists understand that our feelings are influenced by our perceptions. Our perceptions, in turn, are influenced by what we concentrate on or think about when doing a task. During exercise, for example, we could concentrate on the body and our rapidly beating heart or concentrate on achieving our goals. These different ways of thinking may then impact on how we feel during and after exercising.

One approach to looking at thoughts during exercise is to divide them into different types of attentional focus. At one level, we can think about things related to the exercise or unrelated. At another level we can think about things related to the body or those related to environment. This leads to four combinations of attentional focus (i) task-relevant/internal (e.g., feelings of the body, movements, breathing), (ii) task-relevant/external (e.g., number of steps completed, distance travelled), (iii) task-irrelevant/internal (e.g., daydreaming, mental puzzles, planning future activities like meals), and (iv) task-irrelevant/external (e.g., listening to music, talking to others, looking at scenery). Note that some strategies can help distract a person away from the exercise, whereas others increase attention to the exercise in different ways.

In the experiment, we asked 39 senior Australians to participate. Their mean age was 54 years and the maximum age was 77 years. Each person participated in the experiment individually. Because they were of different ages, the intensity of the exercise was controlled by measuring their heart rate. Participants walked on a treadmill during a five minute trial. The speed of the treadmill was varied by the experimenter so that their heart rate stayed between 50-60% of their maximal heart rate (maximal heart rate is calculated as 220 minus the individuals age). In addition to measuring heart rate, we also measured gas exchange to look at oxygen consumption, breathing frequency, and breathing volume. Participants also gave feedback on their feelings after each trial using well validated self-report measures.

Participants completed five different trials across the experiment that lasted up to two hours. The first trial was a “baseline” in which they walked on the treadmill. This was used mainly for helping participants get used to the treadmill and its speed. Next, participants completed four trials under different instructions. The instructions were designed to change what the participants attended to during the exercise. Participants were asked to either attend to the sensations of the muscles in their legs (task-relevant/internal), attend to the distance indicator as they walked (task-relevant/external), count backwards from 200 in 7's (task-irrelevant/internal), or listen to a string of words through speakers (task-irrelevant/external). While there are different ways in which people can attend during exercise, these specific ones were used because they suited the task well and gave good experimental control. Participants completed each trial in random order. Physical and psychological states were measured during and after each trial. Participants also gave feedback at the end of the experiment.

The experiment gave some interesting results. The main thing that was looked at was how the instructions differed in the measurements. The measurements of physiological effort were heart rate, oxygen consumption, breathing frequency, and breathing volume. There were no statistically significant differences between these measures across the four instruction conditions. The distance that participants walked was also measured. Again, no statistically significant differences across the four instructions conditions were found. The lack of differences in physical or physiological effort across the instruction conditions is important. It showed that the experiment was successful in controlling these things. This thus makes our conclusions about the effects of the instructions on psychological states stronger.

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When the results for the psychological states were examined, some important findings emerged. Participants reported being more satisfied with the exercise when using a dissociative strategy. In addition, using the Physical Activity Affect Scale, participants also reported higher positive affect when using a dissociation strategy. A similar finding emerged using the Physical Activity Enjoyment Scale, namely participants reported higher enjoyment of the exercise when using a dissociation strategy. Using the Profile of Mood States measure, the dissociation strategy also resulted in higher vigour and tension, suggesting higher mental energy during the condition. Closer inspection of the results indicated that there were no differences between the type of dissociation strategy that was used. That is, similar results were found regardless of whether participants attended away from the exercise by thinking about a mental puzzle or listening to something.

After the experiment, participants were asked what psychological strategy they most preferred. This feedback supported the subjective ratings. Participants preferred the two dissociation strategies more than the association strategies. Interestingly, participants reported that they would rather focus on something than nothing. That is, participants reported that they would rather exercise when under instructions to focus their attention on something than when given no instructions.

The findings of the experiment have implications for advice we might give senior Australians who wish to exercise. When exercising at a moderate intensity, people will gain more enjoyment, satisfaction, and positive emotions if they distract their attention away from the exercise. By distraction, the individuals are less likely to focus on the unpleasant physical sensations such as fatigue, muscle soreness, and breathlessness.

The research used specific types of attentional focus instructions and an exercise task. However, the findings can be applied to other related strategies and types of exercise. For example, people that may not wish to distract their attention away from the exercise by using mental arithmetic puzzles, could do other mental distraction methods. This could include daydreaming, thinking of past memories, planning future events or meals, or recalling stories or movies. Likewise, there are other ways to distract through attending to the environment. For example, people could look at scenery or objects that they pass, listen to music or an audiobook, or talk to friends. It would be expected that if these forms of distraction included pleasurable things (e.g., recalling fond memories, listening to a favourite audiobook) the benefits of the strategies on improving enjoyment and positive emotions during exercise will be even higher.

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