

The Role of Physical Activity in the Promotion of Mental Health

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Thank you for your patience, you have sitting for so long already. If you want you can stand up and stretch your legs. You have been very stressed today. Actually, my friends, I love exercise and so I walked here from the University Railway Station. It takes about 15 minutes, it's about two kilometres. I think it's a very beautiful walk before I come to this stressful situation.

Anyway, I'm here to talk about exercise and physical activity. I want to share a video clip with you before we start it. Let's start with this one. (video plays)

Problem of Inactivity

I'm talking about physical recreation, physical exercise, activities. In the slides that I am going to show you this is part of the choices we can make and ask ourselves what kind of responses before and after you did it. And ask why do those people get so tired but they still want to do it again. There is some mechanism behind this - physical.

Let's get into the topic. The reasons and rationale behind all those mental health problems is not simple. People are made for moving. We sit here for longer than eight hours - it's not natural at all. I seldom sit actually. In the university we are exploring the so-called 'sitting disease'. Yes, it's true both the CBC in the website, they are producing so many standing working stations to help you stand more in order to turn your body on instead of off. Whenever your body is on so many diseases will be avoided.

In Hong Kong 7 in 10 Hong Kong Chinese children do little or no physical activity and one fifth, 20% of them, are overweight or obese. That is fact. We could be the highest obesity rate, according to the Department of Health figures, in Asia, except Australia. Sometimes Australia may be part of Asia.

You will see the stairs disappear. I have difficulty to find the stairs to walk up in the shopping mall. So it's happened, it's happening, people choose to take the escalator, they form a long line instead of walking up five steps. You know what, in the university I always feel very frustrated whenever I take a lift from the ground floor to my office on the eleventh floor - sometimes I walk, sometimes I take a lift. I feel very frustrated when there's a guy walking in on the first floor and press the second. On the way back I feel even more frustrated because when I come down from the office, eleventh floor, someone from the tenth floor, they press the ninth button.

This is our life. So after 13 hours of the London trip from London to Hong Kong - 13 hours, economy - it's tough you know. I think you've come from Australia, Melbourne - nine hours, ten hours? Do you think you still want to take this route and pay \$100 to get you from the plane to the customs, no, but those people, they do it. They pay for that. This is a kind of hobby, habit already established without thinking, even the body says 'I need stretch'. Golf, it's good but those people don't walk. They play for three and a half, four hours - they seldom walk, they go there and swing, they swing and go and then they

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have a drink. Exercise likes this doesn't really work.

When you look at the WHO literature there are some that look at the risk factors for mental health. - job insecurity, unemployment which is quite tough. Stress, we all know stress. I was asked 'Do you have stress and pressure because the university asks you to publish general papers?' I said 'No, of course no', because I love it - they take from me to do something that I really enjoy so this is something that I am very grateful. But some people are not that lucky - they do not enjoy their work so much. Examinations - you all understand being parents - you have to take the examinations with your kids - a lot of pressure and the kids have tough, tough times.

Social exclusion and alienation. Social exclusion - whenever we use this, we isolate ourselves from the world. I don't have a Facebook. I don't even use a smartphone - before! Because my wife changed to a new phone and gave me the old one and then I am pushed to use it. I put my phone card inside it and suddenly it typed - 'Hey, come and look and use whatsapp'. A loss of face to face discussion, a loss of people talking. So I told my students if some of you get married or your great achievement, you want to invite me - don't whatsapp me or wechat or whatever. At least you call me - 'Professor Lau I really want to see you at my marriage' - I will be there.

I think this is something they create is exclusion and alienation - I'm not saying that technology is not good. The technology is neutral. How we use the technology is the key point. So, yes, people are alienated. This is another story - in the USA, a mother said to her boy 'Hey, Patrick, I haven't seen you for a long time', they go out in friends, and then Patrick, he typed in 'haha' - that's it. This is the world we are facing - locking away people for the people - they isolate themselves. Digital technology - it's how we use it to maximise benefits.

So we are facing a lot of pressures. Physical ill-health, different diseases, life-style change - we are doing multiple things, lots at a time. We are multiple tasked people. How stressed you are, because you don't recognise it - that's bad.

Physical Activity (PA) and Mental Health

Today's topic is mental health. So it's widespread, increasing, hazardous and expensive. And these are the common mental problems in primary health care - alcohol and drug abuse, anxiety, depression, sleeping problems, chronic tiredness, unexplained somatic complaints, low self-esteem.

Different channels like using SMS, internet or even using whatsapp or we are using the games to help people trying to cope with the mental health problems. We've got data in 2010, we found that the internet in universities is very positive and then also PA is always positive to physical health and social health. School-based PA is overlooked and ignored and undervalued. According to the paper in Hong Kong, I think 30% of the primary school students said they are not happy and one third of the school teachers said they have anxiety syndrome. So what's the picture? Both students and teachers as well. We should actually have another survey of principals, school principals.

PA is associated with resilience to occupational stress. Moderate to vigorous PA and less time in sedentary behaviour improves our mental health. So whatever PA you are going to lay out helps. But the intensity should not be very high, it should be mild to moderate. Increased self-esteem and when you have a better self image, you will have a better function in mental health. Higher in emotional intelligence and mental health with PA so it is good too. It can help to enhance your life quality and wellbeing and the direct effect is to treat and prevent other problems.

Among 30 experiments we found a moderate positive effect through PA with the mental health issues especially **depression** and anxiety. Among them four studies show exercise effect is as good as psychotherapy and two studies show it as good as drug therapy. So it seems that it is quite optimistic, quite positive. Six studies indicate beneficial effects for panic attacks, anxiety disorders, schizophrenia and it's apparent for those people with mental illness even when the clinical condition has not been removed yet it will alleviate the symptoms.

Large scale surveys also demonstrate a positive acute effect on mood and moderate intensity exercise. If you are very stressed today then go to the gym, do ten stations circuit training. That's the study we found for the active effect of ten stations above 45 minutes including warm up and cool down you will feel much better - this is the effect of creative exercise. Especially if you choose those activities that are mastery versus comparative. If you conduct exercise which you have the

feeling of being in control, for example if you run 3,000 metres everything is under control, everything is predicted - how much effort, how many kilometres, so everything you can master should change your body. And then you will have a sense of wellbeing.

I would like to spend a little time on **self-esteem** and PA. Through exercise we can increase our self-esteem. There are multiple dimensions of self-esteem - social, career, spiritual, physical (Figure 1). Today we are going to focus on the physical. Among physical self worth we have four elements (Figure 2). Three of them are talking about sport competence - how do we run, how do we feel ourselves, how strong you are and do you feel fit. Among them, body image is more important (Figure 3). There are fewer symptoms of stress and anxiety in more active individuals. For the state of anxiety, single bout of training is quite positive to the individual. You take one hour exercise, training or running or hiking you feel much, much better. This is the absolute effect.

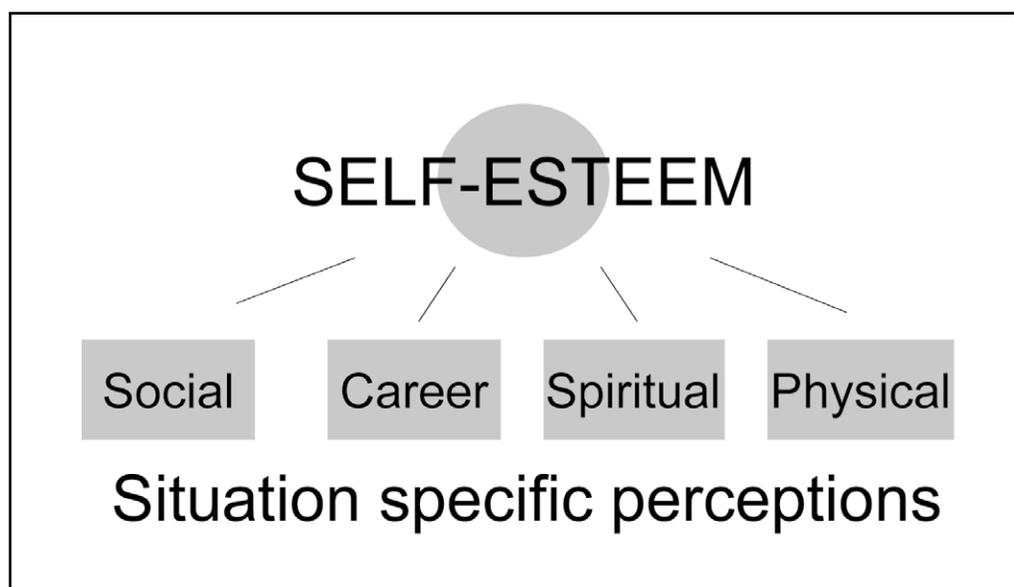


Figure 1: Multiple dimensions of self

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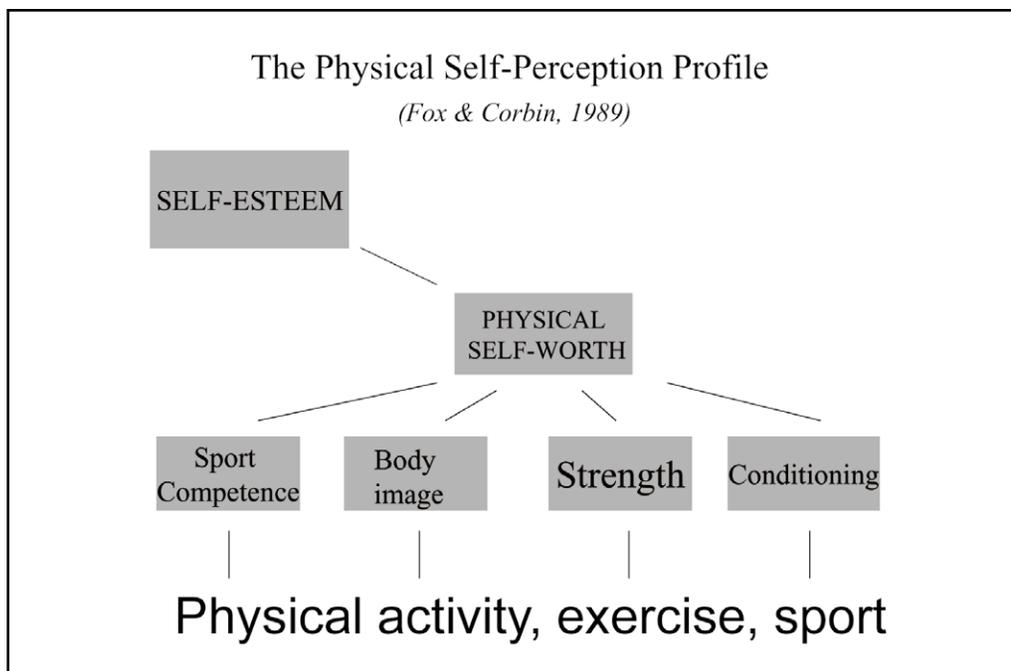


Figure 2: Self-esteem and the physical self

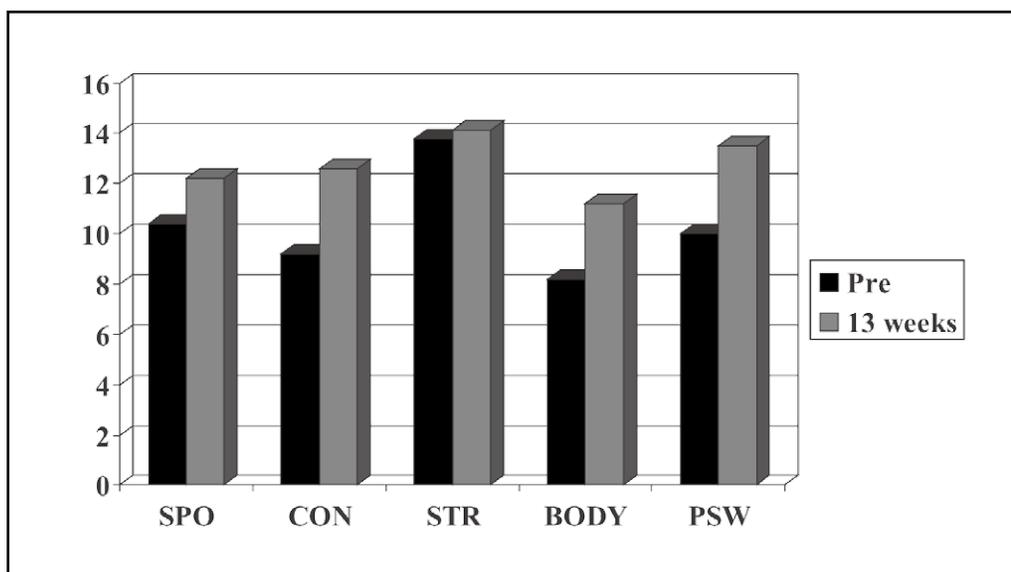


Figure 3: PSPP change scores after 13 weeks in obese females (n=168)

Sleep quality. Whenever you exhaust yourself, this is not about the muscle and mind relaxation approach - you have better sleep. But on the other hand mind to muscle relaxation request your mental mind to control your muscle to relax - this is mind

to muscle relaxation - over and over (Figure 4). It depends on your preference. For me muscle to mind is always good because I would like to exhaust my body and then I can have very good sleep in terms of quality and quantity.

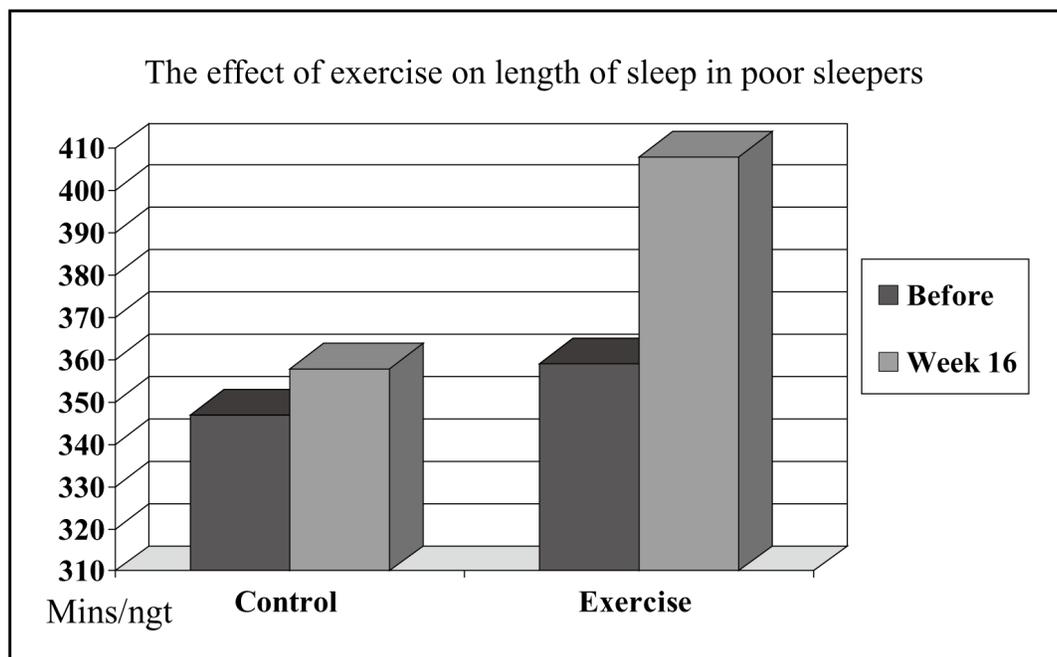


Figure 4: Effects of exercise on mental health

Cognitive impairment. Play mahjong of course - you can avoid dementia. But again not only mahjong you can do a lot of things in exercise and also contribute to prevent the dementia disease. Evidence shows that daily exercise - working memory, planning, decision making in older people demonstrate the positive benefits.

For the mechanism - endorphins, dopamine, serotonin, norepinephrine - all these are human secretions naturally. They build up and are secreted through normal exercise over about three months or more, then your body will definitely give you some feeling of excitement, feeling of happiness and calm down the emotions. This is natural secretion to help you balance your stress. And as I just mentioned physiologically muscle to mind, mind to muscle - either way, choose it. To me, again, I like to exhaust my body to help the quality functioning and it can help your brain to take care of the emotional problems.

So, finally, the psychosocial effects - perceived competence, body image, mastery,

autonomy, identity shift, social competence, social affiliation - all these psychosocial benefits - if you have a better self concept as a whole we will do much better.

Physical Activity Guidance

Guidelines for PA for mental health - **aerobic exercise**, rhythmic exercise of moderate intensity, all these are self expressive exercises. We have difficulty to express ourselves all the time especially for those people in a modern city. We are in a pub with so many people drinking and dancing but we feel very lonely. So aerobic exercise you can express yourself - this is one thing - on the other hand, when we run, this is repetitive exercise - we don't have to think much. When we do something which is repetitive, we need to have a relaxation vacation for the mind.

Resistance exercise - Sometime we think that's it's a silly thing to lift iron on the weight, not all lift the iron weight can help. You will recognise all those people who hold the mirror before and after - they look at the mirror - this

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is the self image building through the months and next time you will be much, much better especially at the gym - the gym culture.

This is an **extreme activity** that PA shows you at Fuji Mountain. This is good. Why? Because from the studies in fact not all people, actually quite a proportion of people cannot express the stress, release them, deep down in their body. So those people they choose some extreme activity which scare them - they can scream, they start to scream for a long time, they have difficulty to do it or they are not allowed to do it. And during that activity in that 30 seconds they will do it automatically and it will help them to release that deep down stress every month or every year.

Why bungee jump, you pay \$1,000 and you will jump down from a bridge. Some people want to experience different feelings

and their adventure activities on one hand can release your stress, on the other hand they can build up your self esteem to prove they are brave enough or whatever their reasons and health. Rambling, **nature walking** - we don't need to jump off a bridge all the time - we can just walk in nature. I remember in July this summer - so beautiful. Even the daily living activities - wax your car, washing the dishes - do whatever you can - move your body and go to see PA is natural. We rate movement. This is a mode of treatment for mental health in both prevention and treatment and it can help improve our mental health and prolong life.

I'd like to conclude this presentation. Don't exaggerate the effect of exercise and physical activity - it can only act as a supplementary or supportive role in mental health problems.