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access to populational mental health knowledge

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Physical activity and mental health: Are certain activities more effective than others?

Isabelle Doré, Doctoral Candidate, public health, specializing in epidemiology, Université de Montréal, CHUM Research Centre, Institut national de santé publique du Québec

Context

Physical activity is now considered a top public health priority. There is a consensus in the scientific community that physical activity is good for our health, specifically for the prevention of cardiovascular diseases, diabetes and obesity. An increasing number of research also shows that physical activity has a positive effect on mental health.

Initially, physical activity generated considerable interest as a depression treatment. Randomized controlled trials among clinical populations demonstrated that physical activity is associated with positive psychological and cognitive changes as well as a decrease in depressive symptoms, anxiety and burnout. For people suffering from major depression, aerobic exercise seems to have effects similar to those of antidepressants during a treatment period lasting several weeks. A number of recent population studies documented an inverse association between physical activity and symptoms of depression and anxiety. Other studies even suggest that physical activity has a *protective effect* against the development of anxiety and depression in adolescents and adults.

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Researchers have studied the modalities of physical activity that maximize mental health benefits. Identifying optimal modalities provides a better understanding of how physical activity positively impacts symptoms of depression and anxiety. It also provides evidence-based data necessary for the development of effective interventions.

Several studies compared the effect of different **doses** of physical activity on mental health. Frequency, duration, intensity or a combination of these parameters, defined the dose of physical activity in these studies. The majority of them conclude there is a dose-response relationship, suggesting that mental health benefits increase as the dose of physical activity increases. This relationship was observed in children as well as adolescent and adult populations (Teychenne, 2008; Ahn, 2011). However, other authors suggest that even a low level of physical activity could prevent symptoms of depression in young women (McKercher, 2009). On the other hand, overtraining and intensive sports practice in competitive athletes is associated to a higher risk of developing anxiety or depressive disorders. Similar results were also observed in sporty people at non-competitive levels (Paluska, 2000).

The **domain**, another modality of physical activity, was recently the focus of studies among adult populations. Physical activity is generally classified into four major domains: 1) *transportation* – physical activity while walking or biking to work or school, for example; 2) *domestic* – physical activity associated with performing various tasks around the house such as cleaning and gardening; 3) *work* – work-related physical activity; 4) *leisure* – physical activity carried out during free time, for pleasure. These studies came to the same conclusion that only leisure-time physical activity is associated with a better quality of life and a lower prevalence of depression (Mc Kercher, 2009; Jurakić, 2010). One study even showed that work-related physical activity was linked to an increased prevalence of depression in women (McKercher, 2009).

Studies show that the social context of physical activity could be a determining factor in explaining the relationship between exercise and mental health

Some recent research examined the influence of the **context** of physical activity (individual, accompanied or group) on mental health. Studies show that the social context of physical activity could be a determining factor in explaining the relationship between exercise and mental health (Taliaferro, 2008; Eime, 2010; Brunet, 2013). Taliaferro et al. (2008) report that being part of a school or community sports team could have a protective effect against feelings of hopelessness and suicide in adolescents. Results also show that the risk of depression and suicide is lower in adolescents who are part of three or more sports teams, than those involved in one or two. Eime et al. (2010) found that among Australian women living in rural areas, being part of a sports club is associated with a higher score on the mental health and life satisfaction scale compared to women who practice other physical activities individually or in groups, but who are not members of a sports club. Recently, Brunet et al. (2013) found that, among young adults in Montréal performing moderate to vigorous physical activities, participation in team sports was inversely associated with the likelihood of depression.

Conclusion

Despite the many unanswered questions regarding modalities that help achieve mental health benefits, many reputable organizations and institutions (NICE[i], CAMH[ii], Kino-Québec) recommend physical activity for its positive effects on stress, anxiety and depressive symptoms. Since we know that social integration and support are determinants of mental health, further research is needed to study the effects of group physical activity on the prevention of anxiety and depressive symptoms. Finally, we should also explore the potential of physical activity for promoting positive mental health.

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i NICE – National Institute for Clinical Excellence

ii CAMH – Centre for Addiction and Mental Health