

Physical Activity: A Tool for Improving Health (Part 2— Mental Health Benefits)

Abstract

By promoting physical activities and incorporating them into their community-based programs, Extension professionals are improving the health of individuals, particularly those with limited resources. This article is the second in a three-part series describing the benefits of physical activity for human health: (1) biological health benefits of physical activity, (2) mental health benefits of physical activity, and (3) recommended amounts of physical activity for optimal health. Each part of the series is designed to help Extension professionals effectively integrate physical activity into community programs and motivate individuals to maintain an interest in being physically active during and after a program.

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Introduction

Over 2,000 years ago, the Greek philosopher Plato advocated for physical activity (PA) as a way to sharpen the mind. According to Plato, frequently using both the body and the mind is essential in perfecting either because if one is neglected, the other also suffers. Plato was ahead of his time in this regard: Modern research shows that the health advantages from sufficient PA are not limited to the purely physical but also include boosts in cognition and focus, improved mood, better sleep quality, and a calming effect. Extension professionals can bolster mental health by providing community programming PA opportunities, such as walking programs (Kriesel, Crawley, & Bowie, 2013; Teran & Hongu, 2012) or strength training programs in rural communities (Seguin, Eldridge, Lynch, & Paul, 2013), thereby promoting healthy aging and a higher quality of life by improving not only physical health (Gallaway & Hongu, 2015) but also emotional and mental health.

Mental Health Benefits of Physical Activity

Prevention and Treatment of Depression

Depression is a mental illness that affects millions of Americans. It does not involve merely "feeling

down" or having a temporary sense of sadness, as everyone experiences such feelings from time to time. Instead, it is a serious illness that is not easy to overcome. A number of medications are effective for many people who have depression, but medication can be expensive and can cause unwanted side effects. Exercise is an excellent alternative or supplement to medication; it is an effective way to help treat depression at virtually no cost and with predominantly beneficial side effects. In fact, some studies have shown that exercise can be as effective at treating depression as drugs (Blumenthal et al., 2007). Although exercise or other PA can cause temporary pain or discomfort, the body responds by releasing natural painkillers called endorphins. Endorphins do more than reduce the feeling of pain; they also can induce positive feelings—the feelings described by the term *runner's high*—thereby helping a person overcome depression naturally. In addition to the positive feelings that endorphins deliver, regular exercise or other PA can provide a more positive self-image (Seguin et al., 2013), which may also help prevent or reduce symptoms of depression.

Relief for Anxiety Disorders

Anxiety disorders result in severe nervousness/fear that can last for long periods of time. These feelings can seemingly come out of nowhere or can be triggered by something that would not typically elicit such a reaction. PA can be an effective treatment for anxiety disorders. Exercise alone may not be as effective as medication for anxiety, but it does ease symptoms and complement other treatments (Jayakody, Gunadasa, & Hosker, 2013). How does PA/exercise help anxiety symptoms? First, the previously described endorphins induce positive and calming feelings. Also, the increase in activity slightly raises body temperature, which may have a further calming effect. Finally, over the long term, an increase in PA typically makes a person feel healthier, so those suffering from anxiety due to health-related triggers may find relief.

Improved Sleep Quality

Getting a good night's rest is important. If we are unable to get enough sleep, we are more likely to make mistakes, lose focus, and become irritable and grumpy—making sleep quality important not just for us but for the sake of those around us. Studies have shown that those who are physically active also exhibit better sleep patterns and sleep quality and experience less fatigue during the day than those who are less active. These effects are found to occur in young and healthy study participants (Brand et al., 2010) as well as in older adults with insomnia (Reid et al., 2010). Exercise and other forms of PA can promote quality sleep by inducing sleepiness. PA during the day tires the body, making a person ready to sleep and recharge for the next day. As explained in the discussion of anxiety, PA can help calm the mind—this circumstance can promote sleep by helping rid the mind of some of the worrying thoughts that keep a person up at night.

Improved Cognitive Abilities

As we age, our cognitive abilities tend to decline. But just as Plato claimed, staying physically active is one way to help keep our minds sharp throughout our lives. Depression, anxiety, and lifestyle factors such as poor sleep, inactivity, and poor diet can cloud a person's thoughts and negatively

affect his or her thinking abilities (Johnson, 2007). As has been explained, the positive effects of exercise and other PA relate to such factors and, thereby, help improve cognition. However, sufficient PA can improve cognition in ways other than by alleviating conditions such as depression and anxiety. Studies have shown that increased PA has a positive relationship with various types of cognition at different stages of life. For example, increased PA positively affects verbal and math test performance, perceptual skills, and intelligence quotient in adolescents, and working memory, planning, multitasking, and other executive control functions in older adults (Hillman, Erickson, & Kramer, 2008). Moreover, it seems that young adults who are physically active likely will have better cognitive abilities in middle age (Zhu et al., 2014). Extension professionals, by incorporating and teaching PA to young adults, may be able to improve cognitive function in the young members of their communities—a positive effect that may have long-term results.

Conclusion

Good mental health is critical to personal, family, and community health across the nation. The information discussed here related to the mental health benefits of PA could be best used through integrated approach/programs of research, education, and practice by the Extension system and community partners.

References

- Blumenthal, J. A., Babyak, M. A., Doraiswamy, P. M., Watkins, L., Hoffman, B. M., Barbour, K. A., Herman, S., Craighead, W. E., Brosse, A. L., Waugh, R., Hinderliter, A., & Sherwood, A. (2007). Exercise and pharmacotherapy in the treatment of major depressive disorder. *Psychosomatic Medicine*, 69(7), 587–596.
- Brand, S., Gerber, M., Beck, J., Hatzinger, M., Pühse, U., & Holsboer-Trachsler, E. (2010). High exercise levels are related to favorable sleep patterns and psychological functioning in adolescents: A comparison of athletes and controls. *Journal of Adolescent Health*, 46(2), 133–141.
- Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Be smart, exercise your heart: Exercise effects on brain and cognition. *Nature Reviews Neuroscience*, 9(1), 58–65.
- Gallaway, P.J., & Hongu, N. (2015). Physical activity: A tool for improving health (Part 1—Biological health benefits). *Journal of Extension* [Online], 53(6) Article 6TOT9. Available at: <http://www.joe.org/joe/2015december/tt9.php>
- Jayakody, K., Gunadasa, S., & Hosker, C. (2013). Exercise for anxiety disorders: Systematic review. *British Journal of Sports Medicine*, 48(3), 187–196.
- Johnson, S. D. (2007) Can Extension programs help communities educate older adults about age-associated memory loss? *Journal of Extension* [Online], 45(2) Article 2IAW7. Available at: <http://www.joe.org/joe/2007april/iw7.php>
- Kriesel, W., Crawley, C. C., & Bowie, M. (2013). Improving the effectiveness of an online fitness program: The Walk Georgia experience. *Journal of Extension* [Online], 51(4) Article 4RIB6. Available at: www.joe.org/joe/2013august/rb6.php

- Reid, K. J., Baron, K. G., Lu, B., Naylor, E., Wolfe, L., & Zee, P. C. (2010). Aerobic exercise improves self-reported sleep and quality of life in older adults with insomnia. *Sleep Medicine*, 11(9), 934–940.
- Seguin, R. A., Eldridge, G., Lynch, W., & Paul, L. C. (2013). Strength training improves body image and physical activity behaviors among midlife and older rural women. *Journal of Extension* [Online], 51(4) Article 4FEA2. Available at: <http://www.joe.org/joe/2013august/a2.php>
- Teran, B., & Hongu, N. (2012). Successful statewide walking program websites. *Journal of Extension* [Online], 50(1) Article 1TOT9. Available at: <http://www.joe.org/joe/2012february/tt9.php>
- Zhu, N., Jacobs, D. R., Schreiner, P. J., Yaffe, K., Bryan, N., Launer, L. J., Whitmer, R. A., Sidney, S., Demerath, E., Thomas, W., Bouchard, C., He, K., Reis, J., & Sternfeld, B. (2014). Cardiorespiratory fitness and cognitive function in middle age The CARDIA Study. *Neurology*, 82(15), 1339–1346.
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