

Commentary

Is regular physical activity a key to mental health? Commentary on
“Association between physical exercise and mental health in 1.2 million
individuals in the USA between 2011 and 2015: A cross-sectional study”,
by Chekroud et al., published in *Lancet Psychiatry*

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The recent publication by Chekroud et al.¹ in *Lancet* focuses on the relationship between physical exercise and mental health. Mental health is defined as optimal personal functioning “resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity”. (p. 4)² Recently, mental health has no longer been described as a dichotomous state but as a continuum, with personal mental states ranging from highly functional to mentally ill.³ An example of one of the most commonly diagnosed mental health disorders is depression, an emerging public health problem,⁴ with symptoms including frequently experienced depressive moods, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration.⁵ Consequently, depression increases physical distress and health problems, ultimately impairing functional well-being and quality of life.⁵ It has been estimated that approximately 15% of the population worldwide is at risk of developing depressive symptoms.^{6,7}

Numerous studies on physical activity and elite sports have investigated the relationship between sport and exercise and depression. A main research focus has been on sport and exercise’s antidepressant function and how regular physical activity can reduce depressive symptoms, thus preventing the occurrence of depression.⁸ Furthermore, there are a number of publications indicating that physical activity interventions can be used as an effective treatment for depression, but as Chekroud et al.¹ correctly point out in the introduction of their study, many of the relevant studies have small sample sizes

and thus do not allow conclusions to be drawn about which types of sport are especially conducive to mental health and what dosages of physical activity can have the best effects.

Chekroud et al.¹ included more than 1 million members of the U.S. population in their study, which investigated the relationship between physical exercise and mental health burden. The study shows a correlation between a higher frequency of regular physical exercise and fewer days on which mental health was not good. A very interesting aspect of the study of Chekroud et al.¹ is that it contributes to our knowledge about the optimal range for frequency and duration of physical exercise and that it is not a “the more, the better” relationship. Chekroud et al.¹ show that the correlation with mental health burden was lowest when individuals engage in about 45 min of exercise 3–5 days per week. This is in close agreement with the recommendation of 150 min per week of moderate-to-vigorous physical activity from the World Health Organization and also aligns with numerous recent training studies showing that marked fitness and positive physiological health effects result when individuals exercise 2–3 times per week for 60 min or participate in a team sport 3 times per week for 40 min.^{9–11} This inverted U relationship corroborates findings showing that excessive exercising is often related to mental health problems (e.g., exercise addiction¹²) and simultaneously indicates that only a sufficient frequency and volume of physical exercise is related to fewer days of mental ill-being.

Another interesting finding from Chekroud et al.¹ is that physical exercise resulting from participation in popular (team) sports seems to show the greatest positive correlation with good mental health. Other studies have indicated that team sports are more conducive to participants’ motivation,^{13,14} experiences of flow,^{15–17} and broad-spectrum health

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effects.¹⁸ It has also been shown that young elite athletes participating in individual sports are at a greater risk for depressive symptoms than athletes who participate in team sports.¹⁹ However, a limitation of this study is that the categorization of sports is a bit unclear. The article by Chekroud et al.¹ lacks an explanation of which types of sport belong to which category and which sports are included in the category of “popular sports”, which is referred to synonymously as “team sports”. It is also unclear why “household” activity is classified as physical exercise. Furthermore, it would be especially interesting to find out what the category called “recreational sports” entails.

The study of Chekroud et al.¹ is cross-sectional in nature, so it does not allow causal inferences to be made. It, therefore, remains unclear whether physical activity leads to mental health or whether mentally healthy individuals just exercise more. Longitudinal studies that clarify this point are warranted, such as studies that track actual physical exercise data. Additionally, in the study of Chekroud et al.,¹ the measurement of mental health is based on 1 item that asks participants how many days during the past 30 days their mental health was not good. Assessing mental health in this way is quick and effective, but it does not reflect the fact that mental health is currently described as a continuum.^{3,20}

Despite the limitations of the study conducted by Chekroud et al.,¹ it is encouraging to see yet another article that addresses not only the physical but also the mental health benefits of regular physical exercise, and especially of team sport involvement. Messages regarding the positive benefits of physical exercise cannot be communicated often enough, especially with regard to their benefits in combatting depression, which is currently so frequently treated pharmacologically.

Competing interests

The authors declare that they have no competing interests.

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