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Physical activity linked to lower rates of depression in bariatric surgery patients

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Adults undergoing bariatric surgery who are more physically active are less likely to have depressive symptoms and to have recently received medication or counseling for depression or anxiety than their less active counterparts, according to new research led by the University of Pittsburgh Graduate School of Public Health.

"Typically, clinical professionals manage their patients' depression and anxiety with counseling and/or antidepressant or anti-anxiety medication," said Wendy C. King, Ph.D., epidemiologist at Pitt Public Health and lead author of the research, which is reported in this month's issue of the *Journal of Psychosomatic Research*. "Recent research has focused on physical activity as an alternative or adjunct treatment."

Adults with severe obesity are nearly twice as likely to have a major depressive disorder (13.3 percent) or anxiety disorder (19.6 percent) when compared to the general population (7.2 and 10.2 percent, respectively). Dr. King noted the importance of treating these conditions prior to surgery, as preoperative depression and anxiety increase the risk of these conditions occurring after surgery and have been shown to have a negative impact on long-term surgically induced weight loss.

As part of the Longitudinal Assessment of Bariatric Surgery-2, an observational study designed to assess the risks and benefits of bariatric surgery, Dr. King and her colleagues assessed participants' physical activity for a week prior to undergoing bariatric surgery using a small electronic device worn above the ankle. Participants also completed

surveys to assess mental health functioning, depressive symptoms and treatment for psychiatric and emotional problems, including depression and anxiety.

A total of 850 adults who were seeking bariatric surgery between 2006 and 2009 from one of 10 different hospitals throughout the United States were included in the study.

Approximately one-third of participants reported depressive symptoms, while two in five reported taking medication or receiving counseling for depression or anxiety. "Those who reported treatment were more likely to report impaired mental health functioning and depressive symptoms, highlighting the need for better treatment modalities," said Dr. King.

The association between physical activity and these outcomes was strongest when only moderate intensity physical activity was considered. However, the number of steps a person walked each day, no matter the pace, also was related.

"Another goal of this study was to determine physical activity thresholds that best differentiated mental health status," said Dr. King. "We were surprised that the thresholds were really low." Just one hour of moderate-intensity physical activity a week—or eight minutes a day—was associated with 92 percent lower odds of treatment for depression or anxiety among adults with severe obesity. Similarly, just 4,750 steps a day—less than half the 10,000 steps recommended for a healthy adult—reduced odds of depression or anxiety treatment by 81 percent.

"It could be that, in this population, important mental health benefits can be gained by simply not being sedentary," said Dr. King.

Because this was an observational, cross-sectional study—meaning patients' regular physical activity behavior and depressive symptoms

were measured at the same time—it could not prove that a patient's physical activity influenced mental health status.

"Results of the study are provocative, but we would need further research to verify that physical activity was responsible for lower levels of depressive symptoms in this patient population," said study co-author Melissa A. Kalarchian, Ph.D., associate professor at Western Psychiatric Institute and Clinic of UPMC. "Nonetheless, physical activity is a key component of behavioral weight management, and it is encouraging to consider that it may have a favorable impact on mental health as well."

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