

# Promoting Nature-Based Activity for People With Mental Illness Through the US “Exercise Is Medicine” Initiative

Nature-based physical activity programming (e.g., countryside walks, hiking, horseback riding) has been found to be an effective way to help improve the health of people with mental illness.

Exercise referral initiatives, whereby health practitioners prescribe exercise in an attempt to prevent or treat chronic illnesses, have helped make such nature-based activities accessible to this population in the United Kingdom and Australia; however, there is a dearth of research related to the most prominent exercise referral program in the United States: Exercise is Medicine.

Taking into account the barriers to physical activity faced by people with mental illness, we explore how nature-based programming for this population might be mobilized in the United States through the growing Exercise is Medicine initiative. (*Am J Public Health*. 2016;106:796–799. doi: 10.2105/AJPH.2016.303047)

Julie Maier, MSW, and Shannon Jette, PhD

In recent decades, there has been growing attention within the field of public health to the various needs of people living with mental illness. Considered to be a marginalized and invisible population, people with mental illness have been found to experience chronic health issues at higher rates than people without such distress.<sup>1</sup>

The incidence and burden of disease are especially severe among people who are marginalized not only because of their mental health status but also because of other factors such as race, class, sexuality, or physical ability. For example, members of racial/ethnic minority groups, lesbian, gay, bisexual, transgender, and questioning people, and lower income individuals are at increased risk of experiencing mental distress and resultant physical health problems owing to the effects of constant (minority) stress.<sup>1,2</sup> People living with mental health issues are also at an increased risk of experiencing homelessness or incarceration, further affecting their ability to receive care.<sup>1</sup>

Over the past decade, a variety of influential health organizations in the United States have called for researchers, practitioners, and policymakers to make concerted efforts to reduce such health disparities.<sup>1</sup> It is in this context that exercise or physical activity is being promoted as a cost-effective adjunctive or preventive treatment of mental illness.<sup>3</sup>

Participation in physical activity and other leisure activities can, however, be particularly difficult for this population. In their review of the literature on physical activity levels among people with mental illness, Daumit et al. found that these individuals tend to engage in less moderate to vigorous physical activity than those without mental illness.<sup>4</sup> Women, in particular, are at higher risk than men with similar types of distress of being sedentary.<sup>4,5</sup> This is not because of individual shortcomings, but numerous barriers and a lack of resources needed to overcome such obstacles.

Thus, although physical activity may have the potential to improve the health and quality of life of people with mental health issues, the challenge is how to make physical activity more accessible, meaningful, and sustainable for this population. One type of physical activity programming that has been found to be well received by people with mental illness is nature-based leisure pursuits including, but not limited to, countryside walks, hiking, and horseback riding.<sup>6,7</sup> In an attempt to make these activities more accessible, some

researchers and practitioners have pointed to exercise referral schemes—initiatives in which health care providers are encouraged to prescribe exercise to patients—as having the potential to help people with mental illness participate in physical activity.<sup>7</sup> Most of this literature, however, has come out of the United Kingdom and Australia.

The point of this commentary is to explore how the most prominent exercise referral scheme in the United States—the Exercise is Medicine initiative (EIM), which started in 2007 as a joint program of the American Medical Association and the American College of Sports Medicine—may be able to play a role in increasing participation in physical activity among people with mental illness.<sup>8</sup> We draw on the existing literature related to the benefits of and challenges to prescribing structured exercise programs to people with mental illness and look to the emerging body of evidence concerning the strengths of nature-based programming for this population. We also explore how such programming might be mobilized in the United States through the growing EIM initiative.

## ABOUT THE AUTHORS

The authors are with the Department of Kinesiology, University of Maryland School of Public Health, College Park.

Correspondence should be sent to Julie Maier, MSW, Department of Kinesiology, School of Public Health, 2242 Valley Dr, Room 1225, College Park, MD 20742 (e-mail: jmaier@umd.edu). Reprints can be ordered at <http://www.ajph.org> by clicking the “Reprints” link.

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As we are not affiliated with EIM, the recommendations we provide are merely a start to what we hope will become a larger conversation. It is also important to note that although we focus mainly on the most prominent referral scheme in the United States, the points we raise are applicable to other nations, given that making physical activity accessible to this population continues to be a challenge worldwide.

## BENEFITS OF AND CHALLENGES TO PHYSICAL ACTIVITY

Beginning in the early 1990s, Western nations such as the United Kingdom and Australia began to institutionalize exercise as a form of medicine through exercise referral schemes. In the United Kingdom, for instance, exercise programs and interventions designed to treat a range of chronic illnesses (e.g., obesity, heart disease, mental illness), as well as other ailments, were subsidized by the National Health Service, helping to provide individuals with a low-cost way to engage in structured, supervised physical activity.<sup>9</sup>

Individuals with mental illness who have participated in programs offered through such referral schemes have reported a plethora of benefits, including increased social interactions, a newly found sense of purpose and empowerment, trust in fitness specialists, safety derived from being in a supportive environment (as opposed to an appearance-focused fitness facility), improvement in symptoms (reductions in rumination, improvements in mood and sleep), and reconnection with a former athletic self or formation of an

identity not attached to mental illness.<sup>10,11</sup>

Despite these benefits, a number of challenges to participation have also been identified. For example, people who are most likely to complete exercise referral programs tend to be men, older adults, people living in nonrural areas, and people without mental illnesses.<sup>12,13</sup> Reasons for low adherence rates include the cost of participating in exercise programs,<sup>7</sup> symptoms of mental illness and side effects of medications (e.g., anxiety, fatigue, weight gain and obesity, hallucinations),<sup>14,15</sup> and the gender dynamics of some programs.<sup>13,16</sup> Significantly, some women with mental illness have noted that they would feel more comfortable exercising in single-sex settings, not only owing to body image concerns but also as a result of trauma history.<sup>16</sup>

The stigma experienced by people with psychiatric disabilities is also an important consideration, as feeling uncomfortable in public settings because of the real or perceived judgments of others may lead to decreased physical activity levels.<sup>15</sup> Gym-based settings, in particular, have been found to elicit anxiety given that there is extra attention on one's physical comportment, fitness level, and appearance.<sup>17</sup>

Nature-based programming for people with mental health issues is a potential way to address some of these challenges.<sup>18</sup> In nature-based environments, individuals are likely to have sensory encounters with flora, fauna, and picturesque landscapes; they may also have to contend with rugged terrain, adverse weather conditions, or challenges planned by group leaders.<sup>19,20</sup> Such experiences can help participants develop physical and psychological skills and foster

relationships. There is less attention than in gym-based settings to athletic performance and appearance, which allows one to reconnect with one's body, appreciating its capacity for experiencing pleasure and overcoming obstacles and its interrelationship with other living and nonliving entities.<sup>19,20</sup>

In addition, taking part in nature-based activities such as gardening or horticulture therapy or volunteering with conservation groups may give individuals a greater sense of purpose and connection with their community.<sup>21</sup> Such benefits are invaluable given that people with severe mental illness are often ostracized, with few opportunities to be truly integrated into society.<sup>22</sup>

It is not enough, however, for health care providers to simply "prescribe" green exercise; efforts must be made to help make programs tailored to this population's needs accessible.<sup>12,13</sup> This is especially important if the most marginalized individuals (e.g., people with severe mental illness who do not have permanent housing or reside in institutions such as psychiatric facilities or prisons) are to benefit from physical activity in green spaces.<sup>23</sup>

## PROMOTING NATURE-BASED PHYSICAL ACTIVITY

In countries such as the United Kingdom and Australia, physical activity interventions and programs are, at times, subsidized through exercise referral schemes. Similarly, EIM could help create more sustainable partnerships and programming for people in the United States with mental health issues.

Although EIM is relatively new, it is a growing movement, as evidenced by its global expansion, growth of resources (e.g., Web site, books, certification programs), and list of funders including Coca Cola, Anytime Fitness, and Technogym. In line with public health's focus on social justice,<sup>24</sup> the EIM initiative also aims to help underserved populations, as suggested in the following excerpt from the EIM Web site:

At the heart of the EIM, there is a desire to help those with the greatest need. This begins by adapting and implementing the EIM Solution for use in medically underserved communities where individuals may not receive any guidance on healthy lifestyle habits.<sup>25</sup>

Although EIM does not appear to have a full-time staff member who could take the lead in collaborating with local community organizations (e.g., mental health centers), government agencies (e.g., parks and recreation departments), or corporations (e.g., health insurance companies) to develop nature-based interventions and programs, EIM-affiliated researchers and practitioners could reach out to such entities in program development efforts. Parks and recreation departments may be particularly important collaborators, and in the past decade there has been an effort to increase park use for public health reasons.<sup>26,27</sup> The National Park Service's Healthy Parks Healthy People initiative is a prime example. Through research and development, this government program, piloted in 2011, is working to better understand how to optimize the health of both people and the environment through creative use of parks.<sup>28</sup>

Health practitioners and park personnel across the United States have also been engaged in promoting the health benefits of “park prescription” programs, in which health care providers write prescriptions for patients to visit a park.<sup>27</sup> Currently, park-based programming does not seem to focus on making nature-based programming accessible to people with mental illness, although the Healthy Parks Healthy People manual does recognize that this is a population for which more research and programming are needed, suggesting that there is space for collaboration between EIM, Healthy Parks Healthy People, and mental health care providers.<sup>28</sup> Collaborative relationships could be fostered by organizing special panels or sessions at relevant meetings such as the 2015 conference of the International Society for Environmental Epidemiology, which focused on green spaces and health, or the US-based conference focused on park prescriptions that is planned for 2016.<sup>27</sup>

The EIM Web site could serve as a hub facilitating such collaborations by helping link people with mental illness (as well as other marginalized groups) to public health professionals interested in making physical activity more accessible.<sup>29</sup> Existing resources on the EIM site, such as a link to the park prescription program, could be enhanced by providing more information related to nature-based programming, as well as mental health. For example, it may be beneficial to incorporate state-specific lists of community health agencies, universities and colleges, wellness centers, and local park and recreation departments along with examples of current park or exercise-related referral

programs taking place in a given community.

It is also crucial that people with mental illness be added to the list of underserved populations on the site. Without increased attention to this population on the site, health care providers, exercise specialists, and the lay public will be less likely to understand that people with mental illness face major health disparities and that physical activity—particularly nature-based activities—may be a potentially beneficial adjunctive treatment option.

The funding of mental health interventions developed through such interdisciplinary partnerships is a potential challenge, especially given that the United States, unlike other Western nations, does not have a national health care system to help subsidize these programs. However, EIM’s corporate sponsors could help finance interventions developed by EIM-affiliated professionals. In the US context, there have been a handful of such collaborations between non-profit and for-profit agencies. Two examples of collaborative nature-based therapeutic programs in the United States are a therapeutic horseback riding program<sup>6</sup> and an outdoor adventure program led by a social worker.<sup>30</sup>

The therapeutic horseback riding initiative took place as a joint effort between a psychiatric rehabilitation program and a horseback riding venue in Connecticut. Participants were able to leave the psychiatric facility for an afternoon and enjoy a car ride, lunch, and horseback riding (and related activities). The rehabilitation staff provided staff at the horseback riding organization with a brief training session on how to work with people with various forms of distress.<sup>6</sup>

The social worker-led outdoor program took place in Minnesota and was subsidized by a health maintenance organization, allowing the participants (women of varying socioeconomic status) to participate at a relatively low cost.<sup>30</sup> The leader, who had experience leading Outward Bound groups as well as administering talk therapy, had the women engage in activities such as yoga, dance therapy, rock climbing, and a group obstacle course. The skills the women learned through the various physical activities translated into improved self-confidence, problem solving, and self-esteem in other areas of their lives.<sup>30</sup>

Ultimately, provision of (consistent) government funding for such programs would be ideal. If there is to be federal and state funding for such initiatives, as well as buy-in from insurers, research must be conducted to establish evidence for the effectiveness of nature-based physical activity interventions.<sup>26,27</sup> More specifically, researchers need to quantify the health benefits associated with specific interventions and identify the mechanisms through which they occur.<sup>26,27</sup>

Researchers continue to grapple with questions such as the following: What, specifically, accounts for people’s improvements in health after being in nature? Is it the social component? Being exposed to particular landscapes or features, such as water? The physical movement? Are unstructured programs as beneficial as structured programs? Are small urban parks as beneficial as more remote countrysides? How do different groups of people experience nature-based activities? It is important that this research base include not only the gold standard randomized controlled trials needed to establish

causality and dose-response metrics but a range of methods from a variety of fields concerned about nature and health.<sup>26,27</sup>

## CONCLUSIONS

As people with mental illness suffer from a disproportionate number of health issues, it is imperative that attention be focused on improving the quality of life of this population. Physical activity—specifically, nature-based activity—is increasingly being promoted as a way to improve mental health. More attention, however, is needed to developing long-standing programs and initiatives that can make such activity accessible to people with mental illness. As EIM and other exercise referral programs continue to grow and develop, they can potentially contribute to achieving this worthy goal. **AJPH**

## CONTRIBUTORS

J. Maier took the lead in the conceptualization, writing, and editing of the article. S. Jette assisted with all stages of development.

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## REFERENCES

1. Safran MA, Mays RA Jr, Huang LN, et al. Mental health disparities. *Am J Public Health*. 2009;99(11):1962–1966.
2. Miranda J, McGuire T, Williams D, Wang P. Mental health in the context of health disparities. *Am J Psychiatry*. 2008; 165(9):1102–1108.
3. Stathopoulou G, Powers MB, Berry AC, Smits JA, Otto MW. Exercise interventions for mental health: a quantitative and qualitative review. *Clin Psychol Sci Pract*. 2006;13(2):179–193.
4. Daumit GL, Goldberg RW, Anthony C, et al. Physical activity patterns in adults with severe mental illness. *J Nerv Ment Dis*. 2005;193(10):641–646.
5. Janney CA, Richardson CR, Holleman RG, et al. Gender, mental health service use and objectively measured physical activity: data from the National Health

- and Nutrition Examination Survey (NHANES 2003–2004). *Ment Health Phys Act*. 2008;1(1):9–16.
6. Bizub AL, Joy A, Davidson L. “It’s like being in another world”: demonstrating the benefits of therapeutic horseback riding for individuals with psychiatric disability. *Psychiatr Rehabil J*. 2003;26(4): 377–384.
7. Crone D. Walking back to health: a qualitative investigation into service users’ experiences of a walking project. *Issues Ment Health Nurs*. 2007;28(2): 167–183.
8. Sallis RE. Exercise is medicine and physicians need to prescribe it! *Br J Sports Med*. 2009;43(1):3–4.
9. Dugdill L, Graham RC, McNair F. Exercise referral: the public health panacea for physical activity promotion? A critical perspective of exercise referral schemes; their development and evaluation. *Ergonomics*. 2005;48(11–14): 1390–1410.
10. Alexandratos K, Barnett F, Thomas Y. The impact of exercise on the mental health and quality of life of people with severe mental illness: a critical review. *Br J Occup Ther*. 2012;75(2):48–60.
11. Mason OJ, Holt R. Mental health and physical activity interventions: a review of the qualitative literature. *J Ment Health*. 2012;21(3):274–284.
12. James DV, Johnston LH, Crone D, et al. Factors associated with physical activity referral uptake and participation. *J Sports Sci*. 2008;26(1):217–224.
13. Crone D, Johnston LH, Gidlow C, Henley C, James DV. Uptake and participation in physical activity referral schemes in the UK: an investigation of patients referred with mental health problems. *Issues Ment Health Nurs*. 2008; 29(10):1088–1097.
14. Crone D, Guy H. ‘I know it is only exercise, but to me it is something that keeps me going’: a qualitative approach to understanding mental health service users’ experiences of sports therapy. *Int J Ment Health Nurs*. 2008;17(3):197–207.
15. McDevitt J, Snyder M, Miller A, Wilbur J. Perceptions of barriers and benefits to physical activity among outpatients in psychiatric rehabilitation. *J Nurs Scholarsh*. 2006;38(1):50–55.
16. Raine P, Truman C, Southerst A. The development of a community gym for people with mental health problems: influences on psychological accessibility. *J Ment Health*. 2002;11(1):43–53.
17. Hefferon K, Mallery R, Gay C, Elliott S. ‘Leave all the troubles of the outside world’: a qualitative study on the binary benefits of ‘Boxercise’ for individuals with mental health difficulties. *Qual Res Sport Exerc Health*. 2013;5(1):80–102.
18. Pretty J, Peacock J, Sellens M, Griffin M. The mental and physical health outcomes of green exercise. *Int J Environ Health Res*. 2005;15(5):319–337.
19. Allen-Collinson J, Leledaki A. Sensing the outdoors: a visual and haptic phenomenology of outdoor exercise embodiment. *Leis Stud*. 2014;34(4):457–470.
20. Whittington A. Challenging girls’ constructions of femininity in the outdoors. *J Exp Educ*. 2006;28(3):205–221.
21. O’Brien L, Burls A, Townsend M, Ebdon M. Volunteering in nature as a way of enabling people to reintegrate into society. *Perspect Public Health*. 2011;131(2): 71–81.
22. Carless D, Douglas K. Narrative, identity and mental health: how men with serious mental illness re-story their lives through sport and exercise. *Psychol Sport Exerc*. 2008;9(5):576–594.
23. Leberman S. Voices behind the walls: female offenders and experiential learning. *J Adventure Educ Outdoor Learn*. 2007;7(2): 113–130.
24. Krieger N, Birn AE. A vision of social justice as the foundation of public health: commemorating 150 years of the spirit of 1848. *Am J Public Health*. 1998;88(11): 1603–1606.
25. American College of Sports Medicine. Exercise is Medicine. Available at: <http://www.exercisemedicine.org>. Accessed January 23, 2016.
26. Ewert AW, Mitten DA, Overholt JR. *Natural Environments and Human Health*. Boston, MA: CABI Books; 2014.
27. Seltentrich N. Just what the doctor ordered: using parks to improve children’s health. *Environ Health Perspect*. 2015;123 (10):A254–A259.
28. National Park Service. The national parks and public health: NPS Healthy Parks, Healthy People science plan. Available at: [http://www.nps.gov/public\\_health/hp/hphp/press/HPHP\\_Science%20Plan\\_accessible%20version.final.23.july.2013.pdf](http://www.nps.gov/public_health/hp/hphp/press/HPHP_Science%20Plan_accessible%20version.final.23.july.2013.pdf). Accessed January 23, 2016.
29. Pérez LM, Martínez J. Community health workers: social justice and policy advocates for community health and well-being. *Am J Public Health*. 2008;98(1): 11–14.
30. Kessell MJ. Women’s adventure group: experiential therapy in an HMO setting. *Women Ther*. 1994;15(3–4): 185–203.

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