

Knee Osteoarthritis, Obesity and Exercise Therapy-A Complex Issue

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Editorial

Background to problem

Knee osteoarthritis, a widespread disabling arthritic condition with no known cure is commonly associated with obesity, although whether this is a cause or consequence of the disease is unclear. Exercise is universally acknowledged as a remedy for both weight control and for osteoarthritis self-care purposes. But in our view, simply hoping the obese knee osteoarthritic patient will be inclined to follow recommendations to exercise is highly presumptive and problematic. In addition to abysmal adherence rates in general for exercise in older adults, listed below are some reasons why such general recommendations towards having obese adults with knee osteoarthritis adopt a physically active lifestyle are likely to fail, if these are not carefully construed, although these factors are not all encompassing and do not apply to all knee osteoarthritis cases equally. As outlined in the related literature [1-10] possible knee osteoarthritis exercise-challenges among obese patients include:

1. Presence of excessive inflammatory effects/foot pain/mechanical stresses.
 2. Reduced desire to participate in exercise due to knee pain and stiffness.
 3. Depression subsequent to obesity that limits motivation for exercise.
 4. Presence of co-morbid health conditions.
 5. Embarrassment as regards exercising in groups or to be seen exercising.
 6. Negative impact of fat mass percentage on muscle structure and function.
 7. Challenges with too many health recommendations applied simultaneously.
- Sedentary lifestyle.

8. Uncertainty about type of exercise, dosage and its frequency.

9. Health provider(s) who have not provided careful recommendations tailored to patient.

10. Fear of pain, pain avoidance, anxiety.

11. Muscle weakness, poor muscle endurance and joint instability.

Impaired balance.

12. Multiple joints sites involved.

13. Exercise is very stressful due to poor cardiovascular health and excess energy demand of weight bearing on a painful joint.

Possible solutions and outcomes

In light of the many anticipated barriers listed above and others including poor self-efficacy for exercising and/or managing pain that may preclude the adoption of any long term exercise program, essential for averting excess joint damage and premature surgery and possible adverse outcomes of this, clinicians dealing with the obese knee osteoarthritis patient can greatly foster their wellbeing in our view in several ways. First, by acknowledging that an array of challenges to regular physical activity is more likely than not. Second, by carrying out careful assessments of the extent and presentation of the patient's biomechanical problem, their level of pain, inflammation status, muscle strength and endurance capacity, joint mobility and stability, psychological and general health status and past experience with exercise, as well as exercise beliefs. Third, they may want to explore the patient's awareness of the multiple benefits they might accrue by regular physical activity, including weight loss, an improved psychological outlook and self-efficacy, a reduced risk of functional dependence, pain reduction and improved quality of life [1-3]. Fourth, they may want to examine the degree to which the patient has skill to carry out physical activity that will be beneficial rather than harmful on a regular basis and

collaborate with them to formulate their personalized commitments and goals, in the form of an activity contract.

To assess progress once a program is designed and agreed upon, highly recommended are periodic follow-up assessments that employ validated and reliable biochemical, biomechanical and/or bioelectrical impedance measures, among others. Ensuring that the resources needed by patients are made available as indicated is equally desirable, as is a multipronged approach including family members or significant others.

Although all this may require clinicians spend more time with each patient, as well as in advocating for possible related resource allocations, acknowledging that the healthcare costs for knee osteoarthritis and obesity are skyrocketing, along with the aging populations worldwide and that obesity complicates knee osteoarthritis outcomes incrementally [6], including the pain experience, the risk for physical disability [1] and low life quality and health [2,3]. In contrast, a long term view of such an investment is likely to yield a positive economic return. Moreover, by reducing the key risk factors for increased knee osteoarthritis disability, as well as for conditions associated with obesity, a great deal of the global burden of the disease and other chronic illnesses that arise from sedentary behaviors, can predictably be envisioned for both individuals and society. As well, medications that are harmful and only treat the symptoms, may not be needed to the same degree, surgery for both osteoarthritis and obesity may be delayed or averted and better outcomes following surgery are expected if appropriate exercise regimens have been adhered to over time.

To this end, advocated is a carefully construed tailored approach where appropriate safe exercise modes and dosages are formulated insightfully and in the context of the patient's abilities, disease status, age and goals. At a minimum such an approach might embody the following attributes-

1. Achievable program goals and carefully titrated exercise dosages.
2. Appropriate social support.
3. Timely supportive feedback.
4. On-going access to an empathetic professional provider.
5. Salient joint protection strategies.
6. Simultaneous efforts to minimize pain, instability and/or joint effusion.
7. Attention to nutritional intake, especially the elimination of inflammatory provoking foods.
8. Builds on individual's prior exercise experience and corrects patient's misperceptions about exercise or bodily states.
9. Comports with individual's disability status, resources, lifes' goals and interests.

10. Fosters a sense of self-control and self-worth.
11. Includes educational as well as evaluative components.
12. Includes ongoing support services.
13. Offers opportunities for peer-provider interactions, collaboration, mastery and discussion.
14. Provides reassurance, ongoing advice, careful explanations, a menu of safe exercise choices and long-term monitoring.
15. Promotes self-efficacy for exercise as well as directives for overcoming barriers to exercise.
16. Utilizes clear written instructions, or educational resources.
17. Emphasizes the importance of stress control-especially as this affects eating behaviors.
18. Applies a holistic perspective.

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