



From uro-oncologists' perspectives: golf as a means of improving wellbeing among prostate cancer survivors

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Abstract

Prostate cancer is the most common cause of cancer-related death among men. Due to related societal limitations, the Coronavirus Disease 2019 pandemic increases physical inactivity, which decreases cancer survivors' functional capacity. As a result, golf might be a good way for prostate cancer survivors who have been fully vaccinated against coronavirus disease to improve their musculoskeletal function, cardiorespiratory fitness, psychological function, and general quality of life. Aerobic activity's ability to adjust hormone levels, prevent obesity, increase immunological function, and lower oxidative stress have all been identified as reasons for its benefit for prostate cancer survivors. Prostate cancer survivors must first complete a fitness evaluation supervised and recommended by a certified clinical exercise physiologist after consultations with a urologic oncologist before enrolling in a cancer-specific community golf program. Cardiopulmonary exercise testing is currently the gold standard technique for the evaluation of cardiopulmonary fitness. Prostate cancer survivors should be placed in a group with regard to their fitness level if they pass this fitness test. Prostate cancer survivors can be grouped into four to five groups at a time. Golfing activities should include warm-up, driving range, and course activities (on-course golf play twice a week for a duration of 90 min per day or 180 min per week at moderate-intensity). From the uro-oncologists' point of view, prostate cancer survivors can benefit from group-based community golf programs that can be recommended and designed for them through the collaboration of their physician and a certified exercise professional.

Keywords Sport · Recreations · Golfs · Training · Exercise · Prostatic cancers · COVID-19 Pandemic

Introduction

Prostate cancer is the leading contributor to cancer-related deaths among men [1]. The coronavirus disease 2019 (COVID-19) pandemic encourages physical inactivity due to the associated social restrictions, which reduces cancer survivors' functional capacity [2]. As a result, golf could be a beneficial leisure activity for prostate cancer survivors who

are fully vaccinated against COVID-19 infection to improve musculoskeletal function, cardiopulmonary fitness, psychosocial function, and overall quality of life [3]. The capability of moderate-intensity aerobic activity to modulate hormone levels, prevent obesity, improve immune function, and reduce oxidative stress has all been proposed as mechanisms underlying exercise's protective effect for prostate cancer survivors [4, 5]. Exercise is beneficial for patients undergoing prostate cancer treatment and post-treatment survivors [5]. Participating in social sports such as golf can improve individuals' quality of life, promote social inclusion, improve health, combat anti-social behavior, boost individual self-esteem and confidence, and broaden perspectives [6, 7]. The positive effects of sports on the health of participants can be determined by the frequency of participation, intensity, and level of adherence over time. Golf as a social sport for prostate cancer survivors will aid them in reintegrating into the community and improve their social skills. Golf has been suggested for an older population as a relatively low-risk form of exercise [8]. Golf involves long periods

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of moderate-intensity walking, which has been shown to improve many health and fitness indicators in middle-aged men and is recommended as a means of improving health and wellbeing [9]. Golf is a leisure activity in which a ball is struck with a club, and the goal is to get the ball into a sequence of holes in the ground with the fewest shots possible [8, 9]. A typical 18-hole round of golf will take more than an hour to complete. Although it is possible that most elderly golfers play for recreational and health reasons [7–9], golf has the potential to provide people of all ages with health, and social benefits [7–9]. Golf is especially popular among middle-aged and older adults, who are less active than younger people [7]. Older adults are more predisposed to prostate cancer than younger adults, and golf is a favorite type of physical activity among older adults [7, 8]. According to one study that investigated the reasons for golf participation among 3,262 older male adults using the Golf Participation Questionnaire for Older Adults, older adults love participating in golf because it is fun, the playing environment is pleasant, and there is nice competition. However, reasons related to health were less important to the participants [10]. Disparities in energy consumption can be substantial depending on personal and golf-related aspects, but golf can be designed as a moderate intensity exercise [7]. The intensity of golf, depending on individual training-load and aerobic fitness, can be quantified using the Borg category-ratio 10 (CR-10) rating of perceived exertion scale before the golf activity, during the activity, and immediately after the activity [11]. The Borg CR-10 rating of perceived exertion scale is a tool that is widely used and is a reliable indicator to monitor and guide exercise intensity. The scale allows individuals to subjectively rate their level of exertion during exercise. Using this scale, an individual's effort and exertion, musculoskeletal pain, breathlessness, and fatigue during physical activity can be determined. Moderate-intensity exercise is at the level of 3–6 on the 1–10 scale, while vigorous-intensity aerobic exercise is at the level of 7–9, and the level of 10 is extremely strong or maximal [11]. According to Broman et al., after conducting pre-exercise health assessments among six young adults (aged 27 years), seven middle-aged (aged 50 years), and six elderly adults (aged 75 years) who were scheduled for a golf activity, they estimated the intensity of the golf activity among the participants using the Borg CR-10 scale [12]. Then, after showing the participants the scale, they asked them to rate their exertion at rest (before and after play) and before entering each green, as well as after walking up five selected hills. At the end of their study, they found that walking an 18-hole golf course corresponds to an exercise intensity that is moderate-to-vigorous for the elderly, mainly low-to-moderate for the middle-aged, and low for young male golfers [12]. Golf typically involves a range of maximal effort. Golf can help groups and individuals achieve minimal public health

standards for moderate-intensity activity [13]. Golf may well have physiologically beneficial effects in the prevention and treatment of various diseases, such as coronary heart disease, type 2 diabetes, stroke, and cancer [14]. Golfing on a regular basis can help older people sustain and increase their lung function. Prostate cancer survivors may gain increased balance, muscular function, and strength by playing golf regularly [7, 15].

Prospective strategies for designing a life-long leisure-time golf program for survivors of prostate cancer

Prior to enrolling prostate cancer survivors in a cancer-specific community golf program, they must undergo a fitness assessment supervised and recommended by a certified clinical exercise physiologist after consultations with a urologic oncologist. Cardiopulmonary exercise testing is currently the gold standard technique for the evaluation of cardiopulmonary fitness as it can measure the training ability and detect any cause of physical deconditioning among prostate cancer survivors. This fitness assessment is highly recommended because it combines the assessment of expired gas with the synchronized inspection of heart rate, arterial blood pressure, oxygen capacity, and electrocardiography [16]. If they pass this fitness test, they should be placed in a group based on their fitness level. Prostate cancer survivors can be enrolled in groups of four to five at a time, with each group receiving twice-weekly golf instruction from golf coaches for one hour per session. Warm-up, driving range, and course-training activities should all be included in the golfing program. More time should be allocated to on-course play as the program advances, and less time will be devoted to the other activities. The instructors will work with the participants to ensure that they are able to play on the golf course. The first week of training should begin with 30 min of basic warm-up activities to help individuals prepare for the physical demands of golf. From week one to week eight, the length of the warm-up session should be gradually reduced. At the driving range, participants should be taught the fundamentals of the full-swing and short game. Week five should be the start of on-course play, which should last 45 min and include two holes. To perform all activities within 90 min per session, holes should be shortened as necessary. The driving range time should be shortened each week, while the number of holes played should be increased, until participants may independently play nine holes. Only 10 min of warm-up and driving range activities should be performed after week 8 and 80 min of on-course play. The participants should be advised to play golf twice a week at least for a duration of 90 min per day (180 min per week) at moderate-intensity.

The occurrence and seriousness of sports-related adverse events should be frequently assessed to determine a participant's safety. Individualized and adapted exercises are preferable to managing the condition and bone load-bearing capacity of prostate cancer patients with metastatic bone disease [17]. Typical clinical features and complications, such as pathological fractures in patients suffering from metastatic bone disease, must be carefully considered before enrolling them in an exercise program. However, prostate cancer survivors who are at high risk for pathological fractures or spinal cord compression should be excluded from playing golf [17].

Over the course of their lives, prostate cancer survivors are expected to engage in leisure golfing. Prostate cancer survivors should be advised to maintain good hand sanitizing hygiene on the golf course to reduce the risk of COVID-19 infection. Cancer survivors who show symptoms such as fever, coughing, sneezing, runny nose, fatigue, and shortness of breath should isolate themselves. Cancer survivors should be screened for signs of illness before beginning the training, and entry should be restricted if illness is detected. Participants should practice physical distancing while playing.

Future perspectives

Androgen deprivation therapy is associated with a significant decrease in muscle strength, which may be exacerbated by physical inactivity [15]. As a result, further studies are needed to determine whether playing golf improves neuromuscular performance, muscle strength, and flexibility among prostate cancer survivors.

Conclusion

Golf is a popular sport all over the world, and the overall risk of injury is lower for prostate cancer survivors when compared to contact sports. It is a sport in which players use a variety of wooden or steel sticks or golf clubs to launch a little hard ball into a range of holes with as few strokes as possible. Golf is a moderate-intensity exercise that can be designed as a leisure activity or social sport for prostate cancer survivors who are fully vaccinated against COVID-19 infection to improve their psychosocial health, musculoskeletal, and cardiorespiratory functions over the course of their life. Golf also enables people to make new friends and fosters a sense of belonging in the community. Green exercise activities, such as golf, have also been demonstrated to boost self-esteem and reduce stress, anger, and depression. Based on the afore-mentioned advantages of golf as a social sport, group-based community golf programs (on-course golf play twice a week for a duration of 90 min per day or 180 min per

week at moderate-intensity) should be recommended and designed by a urologic oncologist and a certified exercise professional for fully vaccinated prostate cancer survivors.

Availability of data/material

Not applicable.

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