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Adherence to and effects on physical function parameters of a community-based standardised exercise programme for overweight or obese patients carried out by local sports clubs



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ABSTRACT

Objectives: To evaluate the adherence to a sports-club-based standardised real-life exercise programme for overweight or obese patients. The effects on physical function parameters, anthropometry and quality of life were also assessed.

Study design: Within this prospective cohort study data from patients in Austrian sports-club-based programmes were analysed.

Methods: Sports-club-based programmes were held twice a week and carried out by local trainers. The target group was overweight or obese patients. Adherence was determined after 2 and 6 months, and physical function parameters were evaluated at baseline and after 2 months.

Results: A total of 71 patients (age: 52.0; standard deviation [SD: 12.1] years; body mass index [BMI]: 37.3 [SD: 8.2] kg/m²) took part in the study. Within the first 2 months the adherence rate was 62%, while 20% (14/71) participated in ≥75% of all offered sessions. After 6 months, 49% (17/35) of the retained sample still participated regularly in an exercise class. At baseline, muscle strength represented only 70% of the age- and sex-specific reference values and could be increased in a range from +4.0% (1.3 [SD: 3.0] kg; muscular endurance for the pectoral muscles) to +22.5% (16.1 [SD: 17.5] kg) (muscular endurance for the lower limb muscles). Concerning endurance capacity, the heart rate for a constant submaximal workload decreased from 126.4 (SD: 21.7) beats per minute at baseline to 120.9 (SD: 21.1) after 2 months ($P < 0.001$).

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Conclusions: Sports clubs, as a non-clinical setting, can offer attractive standardised exercise programmes for a minority of overweight or obese patients. Long term changes in lifestyle, that result in sufficient levels of health enhancing physical activity still remain a huge public health challenge.

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Introduction

A continuous decline in physical activity levels over the last decades has made a significant contribution to the obesity epidemic.¹ A lack of physical activity is an independent risk factor for obesity, and a well-known predictor for many non-communicable chronic diseases.² Thus current physical activity recommendations postulate that 150 min per week of moderate-intensity physical activity or 75 min per week of vigorous-intensity aerobic physical activity, plus additional muscle strengthening activities, are needed to gain substantial health benefits.^{3–5} Based on this knowledge, interventions carried out in numerous studies have aimed to increase habitual physical activity and exercise capacity.^{6,7} However, so far the effects obtained in clinical studies have not been achieved in real-life settings and long term adherence could not have been verified.⁸ Consequently, current guidelines highlight the fact that access to local resources to support exercise is a major issue in the promotion of physical activity.⁹ Fitness instructors and athletic trainers who are already working in communities could therefore be properly trained and used as the required human resources.¹⁰

Since almost two decades, lifestyle studies showed substantial health effects. For instance, the Finnish Diabetes Prevention Study showed that intensive lifestyle intervention resulted in reducing diabetes risk.^{11,12} Already in 2003, Lindström et al.¹¹ concluded, that lifestyle interventions should be implemented in the primary healthcare system. On the contrary, the Look AHEAD Research Group argued, that an intensive lifestyle intervention did not reduce the rate of cardiovascular events in overweight or obese patients with type 2 diabetes mellitus.¹³ Due to the known effects of physical activity on health, various counselling and exercise referral schemes were studied with limited impact.^{14–16} These approaches have in common, that standardised, target group specific, community-based exercise programmes were not available in a wide range. Additionally, Dunstan et al.¹⁷ showed, that community-based programmes are an appealing approach and superior to home-based programmes for overweight and obese patients suffering from type 2 diabetes mellitus. Thus, they provided additional evidence that supervised exercise programmes are an appealing approach for sustainable increase in habitual physical activity levels. To reduce the gap between the known effects of exercise training and successful implementation in communities, a real-life programme named ‘SVA-Bewegt’⁵² was implemented in Vienna-based on a feasibility study.^{11,12} Within this exercise programme local sports clubs and the health insurance sector cooperated to address

physical inactivity, especially of overweight and obese patients. Barriers of this target group for exercising in local sports clubs could be reduced.

This study aimed to evaluate the adherence to and participation in this real-life exercise programme. The effects on physical function parameters, anthropometry and quality of life were also assessed.

Methods

This cohort study evaluates the adherence and participation of a recently developed sports-club-based programme in a real-life setting. The study was carried out in Vienna (Austria) between September 2012 and October 2015. In 2012, 33 standardised exercise classes at 12 different locations were provided and could be attended by our study population. All the exercise classes were carried out in a standardised manner (see description below), but were not restricted to study participants. Within this context, real-life setting means that the exercise classes were offered from local sports clubs, using their own exercise trainers and equipment. They were included in the overall programme of these clubs and were not organised exclusively to perform a study.

Participants

In Austria, health insurance is obligatory. Therefore, almost everybody is insured and has access to the health system. For this study, patients aged between 18 and 85 years with less than 150 min of moderate-intensity physical activity per week were invited during a routine visit to a general practitioner's office or other medical facilities to participate in the exercise programme. Any known acute or chronic contraindications for exercise were an exclusion criterion. Patients suffering from non-communicable diseases like obesity, type 2 diabetes or hypertension were eligible to take part in the study.

Recruitment for the exercise programme

The Social Insurance Authority for Business⁵³ informed general practitioners, outpatient departments and health resorts by post, phone calls and personal appointments. Primarily physicians or their staff informed the patients about the exercise programme. Therefore, posters and flyers were provided. Based on the patients' medical history, physicians decided if the participation in a community-based exercise programme was induced. Due to the fact that recruitment was

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