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ORIGINAL RESEARCH

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The effect of recreational fitness exercises on sedentary men's levels of well-being

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Abstract

Background: Recreation is an indispensable component of leisure time, and physical exercise is one of the most popular recreational activities among sedentary individuals. Regular exercise has positively impacted various health parameters and overall well-being. This study aimed to examine the effect of recreational fitness exercises on the well-being levels of sedentary men. **Methods**: This experimental study utilized a field trial approach. A total of 200 sedentary men, engaging in fitness exercises for the first time, voluntarily participated in the study. A purposive sampling technique was used in sample selection. The fitness program was implemented 3 days a week for 8 weeks. The Recreational Sport Well-being Scale and demographic information form were used to collect data. The data were analyzed using the SPSS 25.0 package program. The Wilcoxon Signed Ranks Test was used to compare pre- and post-exercise results, with a significance level set at 0.05. **Results**: Statistically significant differences were observed in physical and mental health ($p < 0.01$), life satisfaction ($p < 0.05$) and positive emotion ($p < 0.05$) sub-dimensions. However, there was no difference in the family relationship development subdimension ($p > 0.05$). Overall, recreational fitness exercises slightly increased 3 of the 4 components of well-being. **Conclusions**: The findings suggest that recreational fitness exercises are a valuable intervention for enhancing the well-being of sedentary men. Long-term participation in structured recreational fitness programs may yield more sustained improvements in well-being.

Keywords

Recreation; Fitness; Exercise; Well-being; Sedentary

1. Introduction

Recreation is generally defined as the enjoyment of leisure time by individuals [1], and it is widely recognized as an activity that involves physical, mental, social or emotional participation, rather than mere idleness or complete rest. Participation in recreational activities is voluntary and free from coercion and obligations. Intrinsic motivation and the desire to achieve personal fulfillment, rather than extrinsic goals or rewards, are central to the concept of recreation. Although the primary motivation for participating in recreation is generally enjoyment, participation in recreational activities may also be to fulfill intellectual, physical or social needs [2]. To meet these needs, individuals often desire physical activities. Participation in physical recreational activities is associated with benefits such as improved mental health, increased life satisfaction, a greater sense of purpose and enhanced stress management. Beliefs about the roles and benefits of leisure activities have been studied throughout the 20th century. Leisure has been regarded as an important source of meaning and value, and it appears that how individuals choose to spend their leisure time is increasingly central to their personal identity [3].

Sedentary lifestyles have become increasingly prevalent in modern society, posing significant challenges to individuals' physical and mental well-being. The rise in sedentary behaviors, such as prolonged sitting and lack of physical activity, is associated with a variety of negative health outcomes, including obesity, cardiovascular disease and mental health issues [4]. To address this growing concern, researchers have explored the potential benefits of incorporating recreational fitness exercises into the daily routines of sedentary individuals, particularly men, who tend to be more susceptible to the detrimental effects of a sedentary lifestyle [5, 6]. While the existing literature has established a strong link between physical activity and enhanced psychological well-being, the specific impact of recreational fitness exercises on the well-being of sedentary men remains under-researched and warrants further investigation [6].

Existing literature provides valuable insights into the relationship between physical fitness and various aspects of well-being. Studies have demonstrated that regular physical activity can have a positive impact on mental health, psychological resilience and overall life satisfaction [7]. The encouragement of physical activity has also been recognized

as a crucial component in managing mental health disorders, with evidence suggesting that exercise can improve mood, enhance psychological well-being and strengthen self-concept [7, 8]. Moreover, research has highlighted the potential of physical activities in improving physical fitness across the wider community, with strategies aimed at encouraging greater participation in sports and exercise programs [9].

In many parts of the world, individuals are spending an increasing amount of time engaged in sedentary activities [10]. Various factors contribute to this trend, leading to a significant decline in physical movement. In particular, technological advancements have played a major role in promoting sedentary lifestyles, as individuals are increasingly reliant on devices and automation in daily life [11]. Physical inactivity is associated not only with physiological problems but also with a range of psychological problems, including stress, depression, social-physical anxiety, loss of self-confidence, decreased life satisfaction and unhappiness [12]. These factors can collectively impair the general health and well-being of individuals with sedentary lifestyles.

The concept of well-being is expressed as a subjective term. It is defined as a relative state of mind in which a healthy individual can effectively cope with and adapt to the repetitive stresses of daily life [13]. Well-being is a broad term that encompasses what it means to function as a healthy individual across multiple domains. Although well-being frequently appears in the scientific literature alongside words such as "health" and "happiness", these concepts are often defined inconsistently across studies, with many researchers relying on a single construct, such as "happiness" or "high quality of life" to provide an adequate definition [14]. In general, well-being consists of three primary components: physical, social and psychological well-being [15]. Physical well-being encompasses the ability to perform physical activities and fulfill social roles unhindered by physical limitations, bodily pain experiences and biological health indicators [16]. Social well-being is generally accepted as a multifactorial construct encompassing various components of the social environment, which collectively contribute to a positive evaluation of one's social life [14]. Psychological well-being, on the other hand, is characterized by subjective feelings of happiness and satisfaction, and is often considered an integrative indicator of mental health and personal fulfillment [17].

Individuals participate in sportive recreation activities to promote mental health, enhance life satisfaction, find a sense of meaning or purpose, and develop effective stress management skills. The way an individual spends their leisure time largely determines their physical, mental, emotional and social health. Through recreation, many adaptive activities contribute positively to mental health [18]. Well-being is closely linked to good physical health. Boring and monotonous work environments, strained workplace relationships, and challenging or meaningless work can undermine resilience, psychological well-being and physical health [19]. Maintaining or improving the quality of life and well-being is a universal goal across the lifespan. Being physically active is recommended as a strategy to improve quality of life and well-being [20]. Individuals tend to engage in physical activity, exercise, and sportive activities to improve their quality of life and well-being levels in their work life and in the time left over from their work life. The positive relationship between physical activity and health status reveals the necessity of incorporating sportive recreation activities into daily life. It is also stated that sportive activities affect the quality of life and health status of individuals [20]. In the literature, several studies have examined the effect of specific recreational activities [21]. For example, a study conducted in Canada found that exercise is commonly used as a coping mechanism for stress. The same study suggested that when groups less inclined to exercise are encouraged to participate, general stress levels decline and overall health and well-being are positively affected [22].

Fitness is a form of physical activity and becomes a recreational activity when it is performed voluntarily, without responsibility, and with the intention of enhancing personal well-being. Individuals who engage in recreational fitness can experience physical, social and psychological benefits, cope more effectively with daily stressors, and cultivate a more positive outlook on life. The cumulative effects of such activities may contribute positively to individuals' overall well-being. For sedentary individuals, improvements in well-being through recreational fitness are particularly important, as they reflect enhanced psychobiological functioning, including better general health and improved quality of life.

This study hypothesizes that recreational fitness exercises positively affect the well-being levels of sedentary men. Therefore, this study aims to test the hypothesis that recreational fitness exercises are effective in improving the well-being of sedentary men.

2. Materials and methods

2.1 Research model

Our research is applied in terms of its philosophical orientation, explanatory in its objective, and quantitative and experimental in its methodology. It is cross-sectional in terms of its time dimension and group-based in terms of its unit of analysis. This study was designed as an experimental study, specifically a field trial.

2.2 Participants

2.2.1 Inclusion criteria

The study population consisted of individuals who engage in fitness activities for recreational purposes. A purposive sampling technique was thus used in sample selection.

The inclusion criteria are as follows;

- Being over 18 years of age (legal adult age),
- Having no physical disability,
- Not participated in any exercise protocol for 6 months,
- Having no prior background as an amateur athlete,
- Being a citizen of the Republic of Turkey and speaking Turkish,
- Engaging in fitness for the first time for recreational purposes,
- Willingness to voluntarily participate in the research process.

Individuals who did not meet these criteria were excluded from the study.

2.2.2 Sample size

According to Nunnally [23], a sample size equivalent to 10 times the number of items in the scale should be obtained, while MacCallum *et al*. [24] suggest that a sample size of 4 times the number of items is sufficient. However, Comrey and Lee [25], Tabachnick and Fidel [26], and DeVellis [27] have provided broader benchmarks: 200 participants is considered average, 300 good, 500 very good and 1000 or more excellent. It is widely accepted among researchers that the sample size should be at least 5 times the number of items in the applied scale [28, 29].

Based on this information, applying a 14-item scale to a sample of 200 participants indicates that a statistically sufficient sample size was achieved. A total of 200 sedentary male individuals, who were about to begin fitness training for recreational purposes in study sports center, voluntarily participated in the study.

2.3 Data collection

Participants were provided with detailed information about the study immediately upon registration at the study sports center, and voluntary informed consent forms were signed after they agreed to participate. Data were collected in 2 phases. The first data collection took place before the exercise protocol began. Afterward, participants regularly participated in the exercise sessions. The second data collection occurred following the completion of all exercise sessions. The data collection period extended from 01 November 2024 to 28 December 2024.

2.4 Data collection tools

2.4.1 Demographic information form

To collect the personal data of the individuals participating in the study, a demographic information form was used. This form included items on age group, geographic region, mother's education level, father's education level, monthly income, availability of fitness equipment at home, weekly hours allocated for fitness, preferred body part to train and favorite sport branch besides fitness. No identification information was requested from the participants.

2.4.2 Recreational sport well-being scale

This scale was developed by Pi *et al.* [30] and was adapted into Turkish with a validity and reliability study conducted by Koç [31]. The scale has 14 items and 4 sub-dimensions, namely; physical and mental health, life satisfaction, family relationship development and positive emotions. There are no reverse-coded items in the scale. It is designed as a five-point Likert-type scale, with response options ranging from strongly disagree, disagree, undecided, agree and strongly agree. The Cronbach's Alpha reliability coefficient of the scale is high (α = 0.902), indicating strong internal consistency.

2.5 Research protocol

2.5.1 Pre-test protocols

In the first stage, participants were asked to complete the Recreational Sport Well-Being Scale and the demographic information form before starting the fitness program. Participants were given 15 minutes to complete both forms, and it was assumed that all participants responded sincerely and correctly.

2.5.2 Effectiveness implementation program

At this stage, a structured recreational fitness program was designed by certified fitness coaches at the study sports center. All participants were instructed to avoid any physical activity outside the study protocol. The fitness program was implemented 3 days a week for 8 weeks. Each session lasted 1 hour and was designed to include 15 minutes of warm-up and stretching, 60 minutes of practice which focuses on the aerobic system and 10 minutes of cooling down and stretching. During the warm-up phase, participants performed 10 minutes of treadmill jogging, and 5 minutes of dynamic stretching movements were applied from head to toe, including arms, torso, back, abdomen, legs and feet. The cool-down phase included a 5-minute treadmill walk and 5 minutes of static stretching, again from head to toe. Treadmill speeds were adjusted to maintain a heart rate of 120–130 BPM during the warm-up and 90–100 BPM during the cool-down. The main fitness exercises were performed using various fitness machines, targeting different muscle groups.

2.5.3 Posttest protocols

After completing the eight-week recreational fitness exercise program, participants were subjected to a post-test 1 day after their final exercise session. This post-test consisted of a re-administration of the same Recreational Sport Well-Being scale used in the pre-test phase.

2.6 Data analysis

Data were analyzed in the SPSS 25 package program (IBM, Armonk, NY, USA). Descriptive statistics, including frequency, percentage, mean and standard deviation, were calculated. The Wilcoxon test was used for comparisons of dependent variables pre and post intervention. The level of statistical significance was set at $p < 0.05$.

3. Results

As depicted in Table 1, the age distribution of the participants was as follows: 107 participants (53.5%) were 21 years old or younger, while 93 participants (46.5%) were 22 years old or older. The majority of participants were from the Marmara Region (74 participants; 37.0%).

In terms of mothers' education levels, 71 participants (35.5%) reported primary education, and another 71 participants (35.5%) reported secondary education. For father's education levels, the majority, 88 participants (44.0%), had fathers with secondary education.

Regarding monthly income, most participants (64 participants; 32.0%) reported earning four times the minimum wage or more. A large portion of participants, 153 individuals (76.5%), reported having fitness equipment at home.

In terms of weekly hours allocated for fitness, 147 participants (73.5%) reported spending 0–10 hours per week. Finally, the favorite body part to train among participants was the legs,

TABLE 1. Demographic information of the participants.

Variable	Parameter	Frequency	%
Age group			
	21 years and younger	107	53.5
	22 years and older	93	46.5
Region			
	Marmara Region	74	37.0
	Mediterranean Region	43	21.5
	Central Anatolia Region	19	9.5
	Aegean Region	20	10.0
	Black Sea Region	18	9.0
	Eastern Anatolia Region	14	7.0
	Southeastern Anatolia	12	6.0
Mother's education level			
	Primary Education	71	35.5
	Secondary Education	71	35.5
	Higher Education	58	29.0
Father's education level			
	Primary Education	41	20.5
	Secondary Education	88	44.0
	Higher Education	71	35.5
Monthly Income (Participants)			
	Up to 1 minimum wage	41	20.5
	1–2 minimum wage range	44	22.0
	2–3 minimum wage range	31	15.5
	3–4 minimum wage range	20	10.0
	4 minimum wage and above	64	32.0
Having equipment at home for fitness			
	Yes	153	76.5
	No	47	23.5
Weekly hours allocated for fitness			
	0–10 h	147	73.5
	11–20 h	53	26.5
Favorite body part to work with			
	Leg	48	24.0
	Chest	29	14.5
	Abdomen	18	9.0
	Back	44	22.0
	Shoulder	21	10.5
	Arm	25	12.5
	Hip	15	7.5

Ages of the participants were mean = 24.43 ± 6.26, min = 18, max = 40.

cited by 48 individuals (24.0%).

As shown in Table 2, there was a statistically significant difference between pre- and post-test scores in physical and mental health sub-dimension among individuals who began engaging in recreational fitness activities ($p < 0.05$). Additionally, for the sub-dimensions of life satisfaction and positive emotion, the differences between pre- and post-test results were highly statistically significant ($p < 0.01$). However, there was no statistically significant difference observed in the pre- and post-test mean scores for the family relationship development sub-dimension ($p > 0.05$).

4. Discussion

In this study, which examine the effect of recreational fitness exercises on the well-being levels of sedentary men, it was found that the level of well-being statistically increased in the sub-dimensions of physical and mental health, life satisfaction and positive emotions, while no statistically significant change was observed in the family relationship development sub-dimension. These results suggest that recreational fitness activities have a positive impact on several key components of well-being.

The positive effects of exercise and sports participation on positive emotions and public health have been recognized since ancient times [32, 33]. Başar and Sarı [34], in their study comparing individuals who exercise regularly with those who do not, found a statistically significant difference in psychological well-being, with those who engaged in regular sports activities reporting higher well-being levels. These findings are consistent with the results of the present study, reinforcing the view that participation in recreational fitness can contribute meaningfully to psychological and emotional well-being.

A meta-analysis has emphasized the importance of examining the impact of exercise on positive psychological states, such as mood and engagement, rather than focusing solely on the reduction of negative effects [35]. Several studies highlight the positive impact of exercise on emotional well-being. For instance, it has been found that even a single session of moderate aerobic exercise can improve vigor and decrease fatigue among regular exercisers [36]. Furthermore, it has been observed that exercising at moderate intensity for just 20 minutes can lead to increased positive well-being [37]. Another study suggests that even a single bout of exercise can improve mood, with both active and inactive men experiencing increases in mental vigor and exhilaration after moderate-intensity exercise [38]. These findings suggest that even sedentary men can experience immediate positive emotional benefits from engaging in physical activities. It is also important to consider the sustainability of these positive effects. Williams *et al.* [39] investigated the long-term impact of exercise on physical activity participation, which may provide insights into the potential for long-term emotional and psychological benefits of exercise.

In this study, when pre- and post-test data of individuals who began fitness training for recreational purposes were compared, a statistically significant improvement was observed in the life satisfaction sub-dimension ($p < 0.05$). Based on this information, a review of the literature reveals that research on sports, exercise, and physical activity has grown substantially over the years, with numerous studies supporting the positive relationship between physical activity and life satisfaction [40–45]. However, when the literature was examined from another

TABLE 2. Wilcoxon signed ranks test results of the recreational fitness effectiveness on the well-being levels of sedentary participants.

Sub dimension	Measuring	n	mean	±S.d.	min	max	Mean rank	Sum of rank	*z*	*p*
Physical and mental health										
	Pre	200	3.75	0.69	1.25	5	87.60	6570.0	−2.036	0.042*
	Post		3.90	0.58	1.75	5	90.88	9361.0		
Life satisfaction										
	Pre	200	3.77	0.64	1.75	5	77.71	4351.5	−4.556	0.001**
	Post		4.06	0.61	1.50	5	89.33	10,183.5		
Family relationship development										
	Pre	200	3.73	0.72	1.00	5	90.67	8160.5	−0.153	0.879
	Post		3.73	0.77	1.00	5	89.32	7949.5		
Positive emotion										
	Pre	200	3.79	0.63	1.67	5	80.02	4881.0	−4.053	0.001**
	Post		4.03	0.61	2.00	5	90.80	10,170.0		

**: $p < 0.05$, **: $p < 0.01$. S.d.: standard deviation; min: minimum; max: maximum.*

perspective, only one study was found that did not report a significant difference in life satisfaction following physical activity [46].

Šimunović and Olcar [47], in a study of 460 Croatian youth, found that individuals who participated in sports programs reported higher life satisfaction rates compared to those who did not participate in such extracurricular activities. Similarly, Zhang [48] found that a 10-week physical activity program (conducted 4 days a week for 45 minutes) significantly improved the sense of social participation and quality of life scores in patients aged 60 and 65, particularly in the domains of psychological functioning and material well-being. These findings are consistent with the results of our study, further supporting the conclusion that regular participation in physical activity contributes positively to various dimensions of well-being, including life satisfaction.

Yoon *et al*. [49] found that participation in cultural activities and sports was significantly associated with increased life satisfaction in a study involving older Korean adults. Similarly, a study utilizing data from the German Socio-Economic Panel, which examined a welfare-assessment approach to sport participation and volunteering, reported that increased hours spent on sports and volunteering were positively correlated with higher life satisfaction, as shown by linear regression analysis [50]. Furthermore, it was reported that sports participation among individuals with disabilities had a positive and significant correlation with life satisfaction levels [51]. In addition, participation in sports among Chinese adolescents was shown to increase life satisfaction by reducing their academic stress [52].

In this study, when pre- and post-activity data of individuals who began recreational fitness were compared, a statistically significant improvement was observed in the positive emotion sub-dimension ($p < 0.05$). When our findings were compared with the existing literature, several studies [48, 53] reported similar positive findings supporting the notion that physical activity enhances positive emotional states. Notably, no studies were found in the reviewed literature that reported a lack of significant difference in this sub-dimension, further reinforcing the consistency of our findings.

When literature is examined, it becomes clear that there is a need for studies and interventions that encourage individuals to engage in regular exercise to foster a healthier, happier, and psychologically well-balanced society, free from depression. Educational initiatives promoting consistent physical activity should be implemented at all stages of education, helping students develop positive attitudes and behaviors toward exercise from an early age. Family-centered studies and awareness programs can also enhance parents' understanding of the importance of exercise and increase their support for physical activity within the household. In addition, exercise facilities and equipment should be made accessible and inclusive, ensuring that individuals from all socioeconomic backgrounds can be physically active and benefit from its effects on health and well-being.

It is well established that an active lifestyle contributes significantly to an individual's health. In addition to its physical benefits, physical activity and sports also have positive psychological effects on individuals. Therefore, physical activity has attracted increasing attention from researchers not only for its contributions to physical health but also for its role in promoting mental well-being. This study emphasizes the relationship between physical activity and well-being. Individuals who enjoy sports typically engage in these activities with both physical and mental commitment. In the context of sports, a person's physical and mental capacities become integrated into their daily life. The body functions not only as a biological system that processes life and gathers information but also as an essential tool for engaging in sports activities.

Recreational fitness has become an integral part of modern lifestyles and is widely recognized as an effective means of increasing physical activity and promoting overall health and well-being. This study aimed to examine in depth the impact of recreational fitness on individuals' engagement during leisure

time. The findings of our research suggest that recreational fitness contributes positively to physical, mental and social health. However, several critical factors must be considered. While the positive effects of recreational fitness on physical health are well established and broadly acknowledged, its influence on mental and social dimensions may vary depending on individual motivation, consistency of participation and the social context of the activity.

Our findings reaffirm that recreational fitness has the potential to improve individuals' overall quality of life. However, it is important to recognize that the effects of recreational fitness on individuals may vary from person to person, and therefore, further research is needed to explore these individual differences more comprehensively. The relationship between recreational fitness and improving family relationships is particularly noteworthy. When recreational fitness is engaged in as a shared activity among family members, it can help strengthen familial bonds and improve communication. In this context, it is important to encourage families to participate in fitness activities together. Creating family-friendly environments in fitness centers and encouraging group activities for family members are important steps that can be taken in this regard.

However, it is important to note that recreational fitness may not be suitable for everyone. For reasons such as physical limitations or lack of motivation, some individuals may find it difficult to participate in fitness activities. In these cases, it is important to offer alternative exercise options and support individuals to achieve their personal goals. Specifically, developing a variety of exercise programs tailored to individuals' needs, preferences, and physical abilities can help them to participate more easily in recreational fitness activities. Further research is needed to better understand the broader impacts of recreational fitness on individuals. Large-scale studies involving individuals of different age groups, people from different social and economic backgrounds, and individuals with varying levels of physical ability may help us better understand the health effects of recreational fitness. In addition, long-term follow-up studies are essential to assess the long-term effects of recreational fitness. Such research could provide more precise insights on how, and to what extent, recreational fitness improves individuals' quality of life.

4.1 Potential implications

This study represents an important step toward understanding the effects of recreational fitness on individuals' levels of leisure engagement. However, further research is necessary to expand upon the current findings and draw more in-depth and definitive conclusions. Future research could adopt longitudinal designs to understand the psychological and social effects of recreational fitness in more detail. Moreover, examining participants with different demographic characteristics, taking into account variables such as age, gender and socioeconomic status, and comparing the effects of different types of fitness activities on well-being levels may provide a more comprehensive understanding of this issue. Additionally, increasing the sample size, involving multiple sports centers, implementing longer-duration exercise interventions, and introducing additional control groups would improve the generalizability and robustness of future research outcomes.

4.2 Limitations

This study has several limitations. A cross-sectional research method was adopted, which limits the ability to establish causality. All participants are Turkish citizens, which may affect the generalizability of the results to other cultural or national contexts. Participants had no prior experience with sports or exercise, which may have influenced how they responded to the intervention. Moreover, the study was conducted at a single fitness center, limiting the diversity of environmental factors. It was assumed that all self-reported information provided by participants was accurate and truthful, which may introduce potential response bias.

5. Conclusions

In conclusion, recreational fitness has become an essential component of modern life and is increasingly recognized as an effective tool for improving individuals' physical, mental and social health. However, further research is required to fully understand its wide-ranging effects and to ensure that access to recreational fitness opportunities is equitable and inclusive.

The study results offer several suggestions for the development of more effective fitness centers and sports programs to enable individuals to use their leisure time more efficiently. First, fitness facilities must be accessible and offer a wide range of fitness options. This will make it easier for individuals to find activities that suit their interests and needs. In addition, the role of trainers and coaches is critical to increasing motivation and helping individuals reach their personal goals. Trainers can contribute significantly by ensuring proper exercise technique, monitoring progress and providing ongoing support.

Finally, promoting a culture of fitness within society and supporting healthy lifestyle choices can help maximize the long-term benefits of recreational fitness. Public health campaigns and community-based programs can encourage healthy lifestyles and regular physical activity. In addition, integrating fitness programs into schools and workplaces can contribute to creating lifelong habits of physical activity among both children and adults.

AVAILABILITY OF DATA AND MATERIALS

The data presented in this study are available on reasonable request from the corresponding author.

AUTHOR CONTRIBUTIONS

MEU, HA and MS—were used to design the study. MEU and HA—performed the research; analyzed the data. MEU, MS, TA and FS—provided help and advice on research and discussion. MEU, HA, MS, MD, CA, TA and FS—wrote the manuscript. All authors contributed to the editorial changes in the manuscript. All authors have read and approved the final version of the manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from the Kocaeli University Social and Human Sciences Ethics Committee, dated 06 September 2024, with approval number E.655329. In addition, the participants voluntary participated this study.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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