



**NIGERIA SOCIETY FOR
SPORTS MANAGEMENT JOURNAL**

Vol. 6,
JANUARY 2018

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**NIGERIA SOCIETY FOR SPORTS
MANAGEMENT JOURNAL**

Vol. 6. JANUARY 2018

ISSN: 0332 - 7982

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EDITORIAL

The Nigeria Society for Sports Management (NSSM) expresses its profound gratitude to all members of the editorial board and the contributors to the volume 6 of the Nigeria Society for Sports Management Journal (NSSMJ).

The global significance of sports in the overall development of nations, characterized by the huge annual funding in the industry worldwide, calls for a pragmatic approach to sports management in Nigeria. Thus, research in the field of sports management, as a fast growing body in the nation, becomes inevitable for effective sports management practice. Through journals and books in organisation and administration, solutions to the teeming problems surrounding our sports industry can be readily made available.

The Nigeria Society for Sports Management Journal (NSSMJ) over the years have stood as a formidable reference material through the publication of research articles and position papers that attempt to satisfy the yearnings of individuals who want to have general knowledge about current issues in sports management, as well as, those who seek solutions to one problem or the other confronting their organizations.

This current issue of the journal is Volume 6, January, 2018, and we hope that our readers' will carefully make do with first hand information about well researched articles and position papers in the journal.

Prof. Kayode O. OMOLAWON

*Editor-in-Chief and
Publication Secretary*

CONTENTS

	Page
Editorial Board	i
Editorial	ii
Achieving Peace Through Sports – Professor Mohammed Baba Gambari, Ph.D.	1
Guarding The Guide for Sports Development Implementation: A Case Study of The National Sports Policy of Nigeria – Prof. Babatunde Olu Asagba	5
Government Sports Policy on Accommodation, Tax Rebate and Insurance As Predictors of Football Development in Nigeria – Opeoluwa Akinsanmi Oyedele and Professor Kayode O. Omolawon	8
Influence of Competitive Anxiety on Performance of Athletes Participating in Nigeria Universities Games (NUGA) – Dr Mohammed Sanusi	16
Job Stress and Workplace Incivility as Determinants of Turnover Intention among Lagos State Sports Council Personnel – Prof. C.O. Fasan, Dr. R.A. Moronfolu and Dr. N.A. Setonji	23
Predictive Variables as Correlate of Active Sports Participation Among Physically Challenged Individuals in Lagos Communities – Ogunsemore Macpherson Akindele Ph.D.	28
Assessing the Contributions of Sport Psychologists and Sport Managers on the Performance of Kwara United Football Club in Nigeria Premier League – Abubakar, Laro Ibrahim Ph.D. and Mrs. Ikwuka, Franca Nkoli	40
Barriers to Effective Implementation of Sport Policy in Nigeria Schools – Adelakun Kayode (Ph.D)	47
Cognitive Behavioural Therapy and Exercise Adherence Among Older Adults – Oluwatoyin M. Jaiyeoba (Ph.D)	57
A Review of Health and Fitness Centres: A Current Perspective – Emeahara, G. O. (Ph.D.) and Ananomo, L. E. (Ph.D.)	66
Effect of Aerobic Dance Exercise Programme on Selected Health Related Variables and Body Composition of Youths and Adolescents in South Western Nigeria – R.B. Ajala, Dr. I.O. Oladipo and O.C. Adedeji	71
Conceptualizing New Growth Theory (Theory Of Creativity) For Sports Development in Nigeria – Adisa Olawumi (Ph.D.) and Ayeni Adeoti Adeyemi (Ph.D.)	77
Re-Thinking Physical Activity, Sports and Exercise Science as Panacea for Sustaining Health and Development – Dr. Isaac Tunde Adeuga	90
The Relevance of Information and Communication Technology to The Formulation and Implementation of National Sports Policy and Development in Nigeria – Bulus, W. Zamani (Ph.D.)	96

COGNITIVE BEHAVIOURAL THERAPY AND EXERCISE ADHERENCE AMONG OLDER ADULTS

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Abstract

Exercise has numerous benefits, yet older adults do not exercise on regular bases. This is linked to several factors among which are cognitive, behavioural, environmental or social factors. This study examined cognitive behavioural therapy and exercise adherence among older adults. This involves the concept of Cognitive Behavioral Therapy (CBT), Exercise Adherence and Motivation to Exercise Adherence, Theories and Exercise Behaviour Pattern. Cognitive behavioral therapy (CBT), guided by the self regulation model, is presented as a practical way to help older adults see how thoughts guide their exercise behaviour. The study recommended that sports psychologists should be involved in inculcating and practical teaching of CBT to the older adults in order to increase their exercise adherence.

Introduction

Despite myriads of benefits in exercising, few older adults exercise on regular basis. Although the aging human body experiences decline, the onset and rate of decline depend on both individuals genetic predisposition and environmental influences. Regular physical exercise is one way to decelerate the effects of aging. Active older adults are less susceptible than sedentary older adults to disability and loss of functional independence and to falls and subsequent hip fractures (Brown, 2000; Holdrup, Sorensen, Stroger, Lauritzen, Schroll and Gronbaek, 2001). Regular exercise can improve cardiovascular function, muscle strength, flexibility, balance, and bone health. Exercise also has psychological benefits enhancing cognitive function, decreasing depression, and improving body image (Singh, 2002). According to Healthy People (2010), only 31% of individuals 65 to 74 years of age and 23% of individuals 75 years and older report moderate physical activity (i.e., brisk walking, swimming, light yard work, etc.) for 20 minutes 3 or more days per week (U.S. Department of Health and Human Services, 2000). Even fewer (13%) individuals 65 to 74 years of age engage in vigorous physical activity (ie, jogging, running, or cycling) for 20 minutes 3 or more days a week, and this figure decreases to 6% for individuals 75 years old and older (U.S. Department of Health and Human Services, 2000).

Purposeful exercise and increased participation in physical activity are among the most important components of lifestyle, especially for older persons. Participation in these activities is considered an important behaviour that may yield benefits especially on maintaining the physical and psychological well-being (Zago, Park, Fenty-Stewart, Kokubun, and Brown, 2010; Blake, 2012). A published review on physical activity and aging highlighted that, older persons who actively participated in a long term exercise programmes appear to have a good quality of life (Stewart, 2005). Regrettably, majority of old people around the world lead sedentary lifestyles with very little knowledge regarding the importance of physical activity. As highlighted by Irvine, Gelatt, Seeley, Macfarlane and Gau (2013) almost 39% older persons do not meet recommended physical activity guidelines and 33% also reported no leisure-time physical activity. This means that a portion of older people do not meet the recommended exercise programme suggested by the American College of Sports Medicine (Chodzko-Zajko, Proctor, Fiatarone and Singh, 2009). An exercise programme for older persons must include a multi-component training, namely, endurance, flexibility, strengthening, and balance (Chodzko-Zajko, Proctor, Fiatarone and Singh,

2009). Older persons are encouraged to perform moderate intensity exercise 5 days per week with a minimum of 30 minutes per session. This recommendation aims to target all the major physiological systems that are functionally declining due to the aging process. For instance, a regular resistance training programme may induce muscle hypertrophy by altering the expression of myosin heavy isoforms, while aerobic exercise improves blood pressure and decreases the risk of coronary artery disease (Rice and Keogh, 2009; Nied and Franklin, 2002). Balance training also helps in reducing fear of falls and improving dynamic balance (Gusi, Adsuar, Corzo, delPozo-Cruz, Olivares and Paracca, 2012). Thus, it is clear that each training component may contribute to better physical health status.

One of the major issues related to participation in an exercise programme is the compliance or adherence to such programme that may be influenced or determined by numerous factors. A previous study has identified these determinants and grouped them into two main categories: either increase adherence to exercise (motivators) or decrease adherence to exercise (barriers) (Cohen-Mansfield, Marx and Guralnik, 2003). However, most studies consistently found that, self-efficacy was the strongest predictor of exercise adherence (Findorff, Wyman and Gross, 2009). Self-efficacy can be defined as perceived capability and confidence, specific to a particular domain of behaviour (Tinetti and Powell, 1993). In older persons, self-efficacy predicts exercise adherence and this can be used to control and motivate them to engage in physical activity and exercise for as long as possible (McAuley, Katula, Mihalko, 1999). Thus, this indicates a need to develop a theory-based physical activity and exercise intervention that can be linked to the concept of long term exercise adherence. This is vital since exercising has to be an ongoing activity in order to gain its immediate and long term positive effects.

Exercise is an important tool used to restore, maintain, and promote optimal physical function, because exercise must be maintained to receive maximum physical and psychological benefits. Schneider (1996) proposes that a reason for older adults not exercising may be cognitive and requires a cognitive solution. Thus a cognitive behaviour model may best affect behaviour. There are several models that incorporate cognitive behavioural aspect, including rational emotive behavioural therapy, social cognitive theory and self-regulation of exercise maintenance model (Schneider, 1996; Ellis, 1995; Bandura 1998). As an intervention guided by the self-regulation of exercise maintenance model, cognitive behavioral therapy (CBT) strategies can be used to identify and change behaviour

Cognitive Behavioral Therapy (CBT)

Cognitive behavioural therapy (CBT) is a form of psychotherapy that was developed in the mid to late 20th century. In this period there was a renaissance of interest in cognitive factors in psychology and behaviour modification in particular, which occurred simultaneously with the pioneering work of psychotherapists who emphasized the role of dysfunctional thought patterns in coping and emotional disorders. For example, in the mid-1950s, Albert Ellis began to develop rational emotive therapy as an efficient alternative to Freudian psychoanalysis. Aaron Beck, beginning in the 1960s, developed a similar approach for treating depression that was called cognitive therapy. In the 1970s, Michael Mahoney formally applied behaviour modification principles to cognitive processes and Donald Meichenbaum presented a new approach for coping and stress management that he termed cognitive behaviour modification.

Cognitive behavioural therapy is a structured form of therapy guided by the cognitive model. The cognitive model proposes that dysfunctional thinking and unrealistic cognitive appraisals of certain life events can negatively influence feelings and behaviour and that this process is reciprocal, generative of further cognitive impairment and common to all psychological problems (Beck, 1995).

Contemporary CBT is based on the cognitive theory of emotional responses. This model is based on the concept that pathological negative emotions are the result of dysfunctional thinking,

which in turn is shaped by the patient's belief system. Cognitive therapists strive to educate their clients to understand that distorted beliefs adversely influence symptoms, and can be improved by educational and behavioral interventions. The main therapeutic techniques employed in CBT are twofold: first the identification and modification of dysfunctional thought patterns that are interfering with therapeutic progress; and second, engagement of the patient in behavioural interventions aimed at breaking the vicious circle between symptoms and patterns of dysfunctional performance (Bennett and Nelson, 2006).

CBT was originally used in the treatment of cognitive distortions associated with mood disorders. The rationale for its subsequent use in chronic pain states is based on the gate-control theory of pain and on lessons from operant behavioral conditioning (Thieme, 2005). The cognitive behavioural model endorses the view that affective, behavioral, cognitive and sensory or physical aspects are all important for understanding a patient's experience of pain, and emphasizes the influence of the individual's beliefs on the pain experience. CBT involves attempts to down-regulate the neural circuitry involved in inappropriate emotional responses to pain and other symptoms by means of cognitive restructuring techniques and altered behaviours (Boissevain and McCain, 1991; Bradley and Albers, 1999; Keefe, 2005).

The Goal of Cognitive Behavioral Therapy

The goal of cognitive behavioural therapy is to teach a client to replace distorted thinking and unrealistic cognitive appraisals with more realistic and adaptive appraisals. The initial stages of therapy involve educating clients about the relationships between situational triggers, automatic thoughts and emotional, behavioral and physiological reactions according to the cognitive model (Beck, 1995). The initial stages of therapy also involves creating homework assignments, behavioural experiments and learning experiences that teach clients to identify, monitor and evaluate the validity of automatic thoughts. This generally leads to a degree of symptom relief. The later stages of therapy involves identifying and modifying the intermediate and core beliefs that underlie the automatic thoughts cut across situations and predispose individuals to engage in dysfunctional thinking. The final stage of therapy focuses on relapse prevention and on empowering the client to function as his or her own therapist (Beck, 1995)

Exercise adherence

World Health Organization WHO (2003) defines adherence as the extent to which a person's behaviour—taking medication, following a diet, and/or executing lifestyle changes—corresponds to the recommendations of a healthcare provider. Also, Meichenbaum and Turk (1987) defined adherence as the "active, voluntary and collaborative involvement of the patient in a mutually acceptable course of behavior to produce a therapeutic result. Implicit in the concept of adherence is choice and mutuality in goal setting, treatment planning, and implementation of the regimen.

Conraads et al (2012) defined exercise adherence as the extent to which a patient acts in accordance with the advised interval, exercise dose and exercise dosing regimen. The unit of measure for adherence is performed exercise doses per defined period of time reported as a proportion of prescribed exercise doses undergone at the prescribed time interval. Exercise persistence is the accumulation of time from initiation to discontinuation of therapy, measured by time metric (e.g. number of weeks/months, etc. to discontinuation). There have been studies that have exhibited reports of numerous psychological and physical benefits gained through exercise (Farrell and Thompson, 1998; Finkenberg, DiNucci, McCune and McCune, 1994). For instance, when 164 adults were asked reasons for beginning and continuing exercise, physical and psychological healths were variables that correlated to their exercise commitment scores (Farrell and Thompson, 1998). Structured exercise programmes are a type of physical activity and have been found to be beneficial in older people. Carefully designed, structured exercise programmes

can prevent falls, increase muscle strength and enhance balance in older people (Gillespie, Gillespie, Robertson, Lamb, Cumming and Rowe, 2003)

In previous exercise researches targeting workers, results varied depending on the content of the intervention and the location. Moreover, the rate of adherence varied widely, from 40% to 90% (Atlantis, Chow, Kirby and Sing, 2006). The rate of adherence for health promotion programmes promoted by the workplace is lower than 50%, according to Robroek *et al.* (2009). Thus, proper support is needed to maintain motivation and improve the adherence rate. Support for maintaining motivation is similar to weight loss support for patients with diabetes.

CBT and Motivation to Exercise Adherence

CBT, which has been confirmed to be effective for the treatment of depression, has been used to treat patients with various conditions other than mental illnesses in recent years. CBT is based on the premise that dysfunctional attitudes or beliefs are hijacked by maladaptive information processing that leads to psychological and somatic symptoms and that our thoughts and feelings play a fundamental role in behaviour (Adams, 2012). This "cognitive behavioural model" posits that when dysfunctional thoughts or behaviours are corrected both acute stress and the risk for subsequent symptoms will be reduced (Beck, 2008; DeRubeis, Siegle, and Hollon, 2008). CBT programmes for chronic pain (Ehde, Dillworth and Tuner, 2014), dizziness (Cima, Andersson, Schmidt and Henry, 2014) and dieting have been developed (Beck, 2007); Tsiros, Sinn, Brennan, Coates, Walkley, Petkov, Howe and Buckley (2008) verified the effectiveness of a CBT-based programme for diet (Tsiros, *et al.* 2008). In relation to the above, CBT program for exercise adherence should not be left out.

The use of cognitive methods to affect sports performance and change habits has a good track record. Athletes often employ the cognitive techniques of mental rehearsal and mental imagery. The idea is that rehearsing success results in improved performance. When you visualize your goals clearly and specifically, and visualize yourself succeeding at your goals, you create a positive state of mind for changing your exercise behaviour. Make your mental rehearsal vivid and specific - see yourself exercising and achieving your fitness goal to build your motivation to exercise. It can take time to master these techniques, and working with a licensed therapist can help.

Achievable Exercise Goals

Beginning with goals you can accomplish gives you the foundation for success. A common way that people sabotage themselves is taking on too much at once. If you have been inactive for a long time, setting a goal to exercise an hour a day is too much. Starting with something you know you can do, such as taking a 10-minute walk, and tracking your accomplishment builds confidence. Setting and meeting achievable exercise goals increases self-efficacy - the sense of your ability to do a thing. Keeping track of fitness improvements can help you increase exercise motivation.

Identifying Sabotaging Thoughts

A key cognitive behavioural technique for the motivation to exercise is to notice sabotaging thoughts. Paying attention to what goes through your mind when it is time to exercise will help you change the thoughts and habits that hold you back from your goals. Write down each thought such as, "It's too hard," "I am too out of shape," "I do not have time," or "I would rather watch TV." Using worksheets supplied by the American Psychiatric Association's publishing website can help you learn cognitive behavioural techniques and track your progress. Replacing sabotaging thoughts with "positive self-talk" - encouraging yourself to exercise and acknowledging your accomplishments by making positive statements to yourself, a method recommended by the American Council of Exercise - is a cognitive behavioural technique.

Replace Sabotaging Thoughts and Create Motivation

Countering each sabotaging thought with a solution or positive thought gives you the power to overcome thoughts that undermine you. If you think you do not have time, plan a solution, such as cutting out a half hour of TV time or using an exercise machine while watching TV. If you think it is too hard to exercise, write out a plan to gradually increase your exercise intensity and add strength training twice a week. Becoming stronger will give you greater endurance for exercise and make your workouts less tiring. Reading over your goals and reasons for exercising daily helps to reinforce motivation.

Theories and Exercise Behaviour Pattern

There are many behavioural theories that have attempted to explain the operational aspects of exercise adherence and compliance, but there are only a select few that have received much attention in exercise psychology literature. For example, self-efficacy model (Bandura, 1977), the transtheoretical model (Prochaska and DiClemente, 1983) and the theory of planned behavior (Ajzen and Madden, 1986)

Self-efficacy model

The self-efficacy model states that one's behaviour to achieve a particular consequence is dictated based on one's self-beliefs (Bandura, 1977). The self-efficacy model as Bandura (1977) proposed, consists of two separate subjective and abstract mechanisms that drive behavioural outcomes: efficacy expectations and outcome expectations. Efficacy expectation (also known as self-efficacy) is defined as the conviction that one can successfully execute the behaviour required to produce the outcomes. This consists of four components: past accomplishments or failures related to the intended task (performance accomplishments), evaluating the outcomes of those with similar abilities (vicarious experience), suggestions or persuasions from others that the task can be accomplished (verbal persuasion), and speculation of physiological states such as stress or relaxation that may be elicited by certain behaviours (emotional arousal) (Bandura, 1977).

The other aspect of self-efficacy, outcome expectations, is defined as a person's estimate that a given behaviour will lead to certain outcomes. The theory then further suggests that these elements of self-efficacy heavily influence a person's choice of activities in addition to the longevity and intensity of effort the person will expend on that particular activity (Bandura, 1977). Recent studies have applied the self-efficacy model to explain how individuals maintain an exercising habit over an extended period of time (Annesi, 2006; Resnick, 2004; Strachan, Woodgate, Brawley, & Tse, 2005). For instance, in a longitudinal study carried out by Resnick (2004), 78 elderly people living in a retirement community were administered a questionnaire once a year for four consecutive years. Measurements in the questionnaire included self-efficacy and outcome expectancy measures for exercise. In addition, subjects were asked whether they were exercising continuously for 20 minutes at least three times a week. Although findings revealed that the efficacy-outcome expectancy and outcome expectancy-exercise habits relationships were significant only for years 1 and 4 of the survey, data revealed that changes in one's self-efficacy influenced the exercise behaviours in a consistent manner over the four year study.

In another study, Strachan and colleagues (2005) examined 67 maintenance runners belonging to a running group to examine the link between self-efficacy of running and frequency of running or other vigorous forms of physical activity. Subjects self-reported a) their ability to continue running despite facing barriers (barrier self-efficacy), b) their ability to make room to run in their schedule (schedule self-efficacy), and c) their ability to run for a duration ranging from 30 minutes to 3.5 hours. Approximately four weeks later, telephone interviews took place to obtain exercise measures (i.e. how often and for how long they engaged in running or any other vigorous physical activity over the previous week). The finding suggested that all three forms of self-efficacy were significant in predicting running behaviors (Strachan *et al.*, 2005).

Similarly, Annesi (2006) observed the effect self-efficacy for exercise had on voluntary physical activity among 125 adolescents enrolled in a 12-week after-school physical activity programme. Like previous self-efficacy related studies, barriers to self-efficacy were measured.

Also measured was voluntary physical activity which consisted of the number of days over the previous week a participant engaged in moderate-to-vigorous physical activity outside of physical education classes or any programmes associated with after-school care. These measurements were taken at the first and last (12th) week of the after-school physical activity programme. Results indicated that, the self-efficacy measures were significantly correlated with voluntary physical activity over the 12 week period (Annesi, 2006).

Transtheoretical model

The Transtheoretical Model (TTM) aims to describe behavioural changes in a series of five separate non-linear and cyclical stages (Prochaska & DiClemente, 1983). As Prochaska and DiClemente (1983) proposed, the first stage of behavioural change is pre-contemplation where the individual has no intent on changing a targeted behaviour. The second stage is contemplation, where the person evaluates the benefits and hindrances of a particular behaviour and intends on engaging in that behaviour within the next six months. The third stage is preparation, which is when the person plans on changing the specified behaviour sometime in the near future (i.e. within the next 6 months). The next stage of change signifies the beginning of engagement in the targeted behavior; this is known as the action stage. Maintenance is the final stage of change that occurs when one has continued the intended behaviour for an extended period of time (i.e. for at least 6 months). Prochaska and DiClemente (1983) also noted that, people in any particular stage can either remain, progress, or regress into any other stage at any given rate of time.

There have been numerous times when the TTM had been applied in a physical activity setting, attempting to explain the process of initiating and maintaining exercise behaviour (Marshall and Biddle, 2001). For instance, in a meta-analysis by Marshall and Biddle (2001), 80 independent samples ranging in various demographics (ex. educational, exercise facilities, worksite, etc.) were analyzed to find common exercising habits and characteristics within each stage relevant to the TTM. Overall findings of the study suggested that the level of physical activity, self-efficacy, and reported perceived advantages of exercising increased as individuals advanced to the next higher stage of change (Marshall and Biddle, 2001).

In more specific term, as Marshall and Biddle (2001) explained, there were distinct exercise qualities identified in each stage of change. In the precontemplative stage of exercise, individuals are relatively sedentary, and do not intend on being physically active in the near future. In this stage, perceived benefits of exercise, measures of self-efficacy and physical activity are minimal. Unlike the precontemplative stage, the contemplative stage occurs when those intend on exercising sometime in the foreseeable future. Although they begin to acknowledge the advantages of exercise and intend on being physically active sometime in the near future, physical activity levels are still low and change very little. In the next stage, the preparation stage, individuals begin to develop and embark on some sort of action plan to meet a specified exercise criterion. In the fourth stage, the action stage, exercise initiation commences and endures for approximately six months. During this stage, physical activity levels sharply rise to meet a certain standard for physical activity. Maintenance which is the fifth and final stage of the TTM occurs when a person has consistently met a criterion level of PA for approximately six months.

Theory of planned behavior

Another behavioural theory that has gained much attention in the exercise psychology arena is the theory of planned behaviour (Hagger, Chatzisarantis, and Biddle, 2002). The theory of planned behaviour is a multidimensional model which attempts to explain that intentions, which ultimately drive behaviours, are contingent upon an assortment of attitude, social beliefs, and perceived difficulty in carrying out the behaviour (Ajzen and Madden, 1986). Proposed by Ajzen and Madden (1986), the intent to engage in a particular behaviour is based on three interrelated yet independent variables: attitude toward the behaviour, subjective norms, and perceived behavioural control. The attitude towards the behaviour is the degree to which the person will favour or not favor the particular behaviour. Subjective norms refer to the perceived social pressures to pursue or not pursue the intended behaviour. The third predictor of behavioural intentions, perceived behavioural control, is the perceived difficulty level in carrying out the

intended behaviour. Perceived behavioural control is also theorized to be the only one of the three determinants of behaviour intentions to have a direct influence on actual exhibited behaviour (Ajzen and Madden, 1986).

The theory of planned behaviour has been applied in past exercise research to explain the beliefs and attitudes that complement compliance to an exercise habit (Hagger, Chatzisarantis and Biddle, 2002). In a meta-analysis involving 79 independent samples in 71 research studies, Hagger and colleagues (2002) examined the validation of links between the theories constructs in a physical activity setting. Results indicated that, the theory of planned behaviour constructs did indeed affirm validation for the model. More specifically, one's attitude towards physical activity, perceived pressures from others to exercise, and the view of how challenging it would be to engage in the particular type of physical activity will influence one's intentions to partake in that act of exercise. Those intentions then heavily determine whether the person actually participates and maintains the targeted exercise regimen (Hagger, Chatzisarantis and Biddle, 2002).

Conclusion

Exercise adherence problems are common among older adults. Many factors are potentially related to these problems, including demographic, psychological, social and environmental. Many older adults begin exercise on a high note and gradually lose interest and motivation to go on with the exercise. Cognitive behavioural therapy (CBT) consisting of a number of theories and evidence-based exercise maintenance promotion methods can be used to increase exercise adherence in older adults. Cognitive behavioural therapy can be another tool for promoting exercise adherence in older adults. By incorporating concepts of CBT into their exercise programme, sports psychologists can help older adults see the connection between their thoughts about exercise and their behaviour. Also, it suggests a possibility for physiologically trained exercise leaders to administer behavioural change interventions associated with increased participant adherence.

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