

Behaviour change in exercise referral

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Chapter Aims:

The aims of this chapter are to:

- Support the application of physical activity guidelines.
- Introduce individual and environmental factors associated with physical activity.
- Present strategies to identify and overcome individual and environmental barriers to physical activity.
- Explain how physical activity outcome expectations should be communicated to clients.
- Present various behavioural strategies to promote physical activity within exercise referral schemes.
- Overview stages of change and goal-setting strategies to promote physical activity
- Suggest strategies to address physical activity relapse.

Introduction

The benefits of physical activity are numerous and well documented (Warburton & Bredin, 2016). Extensive, robust evidence has shown that being active can have physical, psychological, and social benefits (Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010; Rhodes et al., 2017; Lubans, et al., 2016; Pels & Kleinert, 2016). Physical health benefits can include reduced risk of coronary heart disease, high blood pressure, stroke, metabolic syndrome, type 2 diabetes, breast cancer, colon cancer, falling, and all-cause mortality (Lee et al., 2012). Physical activity has been shown to improve cardiorespiratory and muscular fitness, help individuals improve their body mass and composition, strengthen their bone health, and increase functional health (Rhodes et al., 2017). Psychological benefits include improvements in cognition, wellbeing, a sense of self, a sense of independence, self-confidence, self-esteem, and symptoms of various mental illnesses, including major depressive disorder, generalized anxiety disorder, stress-related disorders, bipolar disorder, schizophrenia, alcohol use disorder, and eating disorders (for a full review, see: Stubbs & Rosenbaum, 2018). With respect to social benefits, people who are active enjoy meeting individuals, sustaining important relationships in their lives, feeling a sense of purpose and pleasure, and being active in their communities (Pels & Kleinert, 2016). Being physically active outdoors, be it green or blue physical activity, also brings about several additional benefits, in addition to those physical, psychological, and social benefits, like an appreciation for the natural environment, engagement in ecological management and preservation, and volunteerism (Dennis & James, 2016). Overall, the evidence to be active is clear and robust.

Despite these benefits, few people engage in sufficient, regular physical activity. A report by Public Health England, showed that 42% of women and 34% of men are not active enough to achieve good health (Office for National Statistics, 2017). These figures show that people in England are more inactive when compared to global trends, where the prevalence of physical inactivity is 27.5% (95% uncertainty interval, 25.0-32.2%; Women, 31.7% (28.6-39.0%); Men, 23.4% (21.1-30.7%)) (Guthold, Stevens, Riley, & Bull, 2018).

Physical Activity Guidelines

The UK Physical Activity Guidelines provide guidance from the Chief Medical Officer on the amount of physical activity people should do on a daily or weekly basis (Department of Health and Social Care, 2019). The Guidelines are age specific: early years (infants, under 5 years of age who cannot walk), early years (children, under 5 years of age who are capable of walking), children and young people (5 to 18 years), adults (19-64 years), and older adults (65+ years). For each age group, guidance is also given to reduce sedentary behaviour, primarily time spent sitting.

For infants and children who cannot walk, the Guidelines advocate for physical activity both through floor-based play and water-based activities. Time spent sitting, including time spent in restraints, should be minimized. For children under 5 years of age who are capable of walking, the Guidelines encourage the accumulation of 180 minutes of physical activity while also cutting down on sedentary time. Children and young people between 5 and 18 years should get on average 60 minutes of moderate (3-6 Metabolic Equivalents, brisk walking, dancing) or vigorous (>6 Metabolic Equivalents, running, fast cycling) activity each day. Each week, children and young people are encouraged to engage in a variety of types and intensities of physical activity across the week to develop movement skills, muscular fitness, and bone strength. Again, steps should be taken to limit the amount of time spent being sedentary. For adults, over the course of a week, 150 minutes of moderate intensity activity or 75 minutes of vigorous intensity activity should be accumulated. Additionally, strength training exercises should be done on at least 2 days a week. Again, time spent being sedentary should be minimised. Lastly for older adults, 150 minutes of moderate intensity activity or 75 minutes of vigorous activity should be attained. On 2 days a week, activities should be engaged in to help with strength training, flexibility and balance. Like all other age groups, time spent being sedentary should be minimised.

Physical activity research frameworks

Epidemiological evidence has shown (Guthold et al., 2018), being active is not easy, and something most people don't do enough of. Research concerning physical activity to date has mostly followed the behavioural epidemiological framework (Sallis & Owen, 1999). The framework advocates a 5-step, non-linear and fluid, model set out to establish health outcomes evidence for physical activity behaviour change by better understanding issues of physical activity measurement and determinants of physical activity behaviour change, that ultimately lead researchers to design more robust interventions and translate those findings into practice. The framework is non-linear and fluid to allow room for contextual changes over time and adaptability, like, new technological advances in physical activity measurement (e.g., mobile phone tracking) or changes in the determinants of physical activity behaviour (e.g., environmental changes including the climate emergency on air quality or temperature). The framework is also inclusive of multiple perspectives toward understanding factors that may influence physical activity behaviour and ultimately how physical activity interventions can be designed and delivered. As such, the framework acknowledges an ecological perspective toward physical activity (Brofenbrenner, 1979; Sallis, Owen, & Fisher, 2008). The ecological framework is built on an understanding that people operate within both social and physical environments, where multiple factors, at multiple levels, influence physical activity behaviour. Levels within an ecological framework include intrapersonal (e.g., biological factors, psychological factors), interpersonal (e.g., social

relationships), community/organizational (e.g., schools, workplaces), the physical environment (e.g., built and natural), and policy (e.g., regulations, laws) (Sallis, Owen, & Fisher, 2008). A better understanding of individual and environmental factors that influence physical activity, has led to the creation of multi-level interventions that have helped people better identify barriers to and harness facilitators of being active.

Individual and environmental factors

Research that has informed our understanding of factors that influence physical activity behaviour has been derived from both cross-sectional and longitudinal (observational and intervention) studies (Atkin, van Sluijs, Dollman, Taylor, & Stanley, 2016). Cross-sectional studies have shown various relationships between individual and environmental factors and physical activity. These factors are known as correlates. Longitudinal studies have shown various causal inferences between individual and environmental factors and physical activity, or what are known as determinants. Correlates and determinants can be known as mediators, where they facilitate a causal relationship between independent and dependent variables, moderators, where they determine the strength of a relationship between independent and dependent variables, and confounders, where they predict the dependent variable and are also associated with the independent variable (Bauman, Sallis, Dzewaltowski, & Owen, 2002; Condello et al., 2017).

For example, there is a causal relationship between a physical activity intervention (independent variable), whereby it leads to improvements in one's physical activity self-efficacy, which leads to an increased amount of time spent being physically active (dependent variable). A causal relationship exists between the intervention, self-efficacy, and physical activity. Here, self-efficacy acts as a mediator, where it facilitates this causal relationship. To illustrate what a moderator is, consider the variable gender. A physical activity intervention (independent variable) does not affect a person's gender. The time spent being physically active differs between individuals of different genders, where those who identify as men being more physically active than those who identify as women. Here, gender acts as a moderator, where it determines the strength of the relationship between an independent variable and a dependent variable. To explain a confounding variable, consider a person's age. Age may have an impact on the amount of time spent being physically active (dependent variable), where individuals who are older have been shown to be less active. Age may also have an impact on engagement in a physical activity intervention (independent variable), where individuals who are older have been shown to be less willing to enrol in such physical activity interventions or programmes.

Having knowledge of correlates and determinants and their impact on physical activity behaviour is crucial as this knowledge will help develop and advance theories used to underpin physical activity interventions (Biddle, Mutrie, & Gorely, 2015). This knowledge will tell us which groups to target (moderators), how to improve the causal relationship between interventions and physical activity (mediators), and other factors we should be mindful of (confounders). Presented below, is a review of some of the current knowledge of some of the most important correlates and determinants and how they have been shown to facilitate physical activity behaviour in adults and older adults.

Correlates and determinants of physical activity

The Lancet Physical Activity Series Working Group (Bauman et al., 2012) examined systematic reviews that explored different correlates and determinants of physical activity. Their review broke down correlates and determinants by demographic and biological factors, psychosocial factors, behavioural factors, social and cultural factors, and environmental factors. In each of these categories, they found evidence that either supported or did not support these factors playing a role in influencing physical activity. Many systematic reviews reviewed by the Lancet Group found inconclusive evidence for some factors, meaning it was not certain if some factors played a role in influencing physical activity. This finding on inconclusive evidence has been supported by Condello and colleagues (2017), who suggested that more rigorous prospective studies be conducted that rely on objective methods of physical activity measurement to understand correlates and determinants.

Demographic and biological factors

Research suggests that as people age, physical activity decreases (Kaewthummanukul & Brown, 2006, Rhodes et al., 1999, Trost et al., 2002), with men being more active than women throughout the lifespan (Rhodes et al., 1999; Trost et al., 2002). Physical activity has been shown to increase with income (Plonczynski, 2003; Trost et al., 2002) and health status or one's perceived level of fitness (Rhodes et al., 1999; Trost et al., 2002; Plonczynski, 2003; Allender et al., 2008, Van Stralen et al., 2009).

Psychosocial Factors

Self-efficacy, i.e. the belief individuals have in their capabilities to accomplish a task, was one of the strongest correlates and determinants of physical activity (Rhodes et al., 1999; Trost et al., 2002; Plonczynski, 2003; Kaewthummanukul & Brown, 2006; Van Stralen et al., 2009). Intentions to be active were found to be correlated with physical activity (Rhodes et al., 1999; Trost et al., 2002), especially in the beginning stages of becoming active (Van Stralen et al., 2009). Evidence suggests that using a stage approach to becoming active may be beneficial (Trost et al., 2002; Van Stralen et al., 2009), with action planning being most useful in setting intentions in the pursuit of increasing physical activity behaviour (Van Stralen et al., 2009).

Behavioural Factors

Some evidence suggests that prior physical activity behaviour plays a role in shaping the physical activity behaviour of adults (Babakus & Thompson, 2012; Barnett, van Sluijs, Ogilvie D, 2012; Trost et al., 2002; Van Stralen et al., 2009; Koeneman, Verheijden, Chinapaw, & Hopman-Rock, 2011). Smoking was also associated with lower levels of physical activity behaviour (Koeneman et al., 2011). Consult these references for further details on behavioural factors influencing physical activity behaviours.

Social and cultural factors

Social support is correlated with physical activity in a range of individuals, particularly from family and peers with similar health concerns (Rhodes et al., 1999).

Environmental factors

Evidence suggests the presence of recreational facilities playing a role in physical activity (Humpel et al., 2002; Owen et al., 2004; Duncan et al., 2005; Wendel-Vos et al., 2007; Van Stralen et al., 2009), as did effective transportation systems (Humpel et al., 2002; Owen et al., 2004; Duncan et al., 2005; Van Stralen et al., 2009). The aesthetics of an environment also helped individuals become active (Humpel et al., 2002; Cunningham & Michael, 2004; Owen et al., 2004).

Barriers to physical activity

Individual and environmental barriers

The 2007 Health Survey for England (Craig & Shelton, 2008) highlights many individual and environmental barriers to physical activity for women and men. For all adult women, the most cited individual barriers were a lack of time (37%), work commitments (34%), caring responsibilities for children or older individuals (25%), a lack of motivation (25%), and not perceiving oneself as “sporty” (21%). For women who were older (55-64 years), slightly different barriers existed and were more prominent. For instance, poor health and physical limitations was the most reported barrier (23%), followed by not perceiving oneself as “sporty” (21%), work commitments (20%), a perception that they didn’t need to be any more active (20%), and a lack of time (19%). For women who were younger (16-24 years), the most reported barriers were a lack of time (44%), a lack of motivation (36%), work commitments (35%), a lack of money (34%), and not perceiving oneself as a “sporty” (27%).

For all adult men, work commitments (45%), a lack of time (38%), a lack of motivation (21%), a perception that they don’t need to be any more active (17%), and a preference for doing other things other than physical activity (15%). For men who were older (55-64 years), the most reported barriers for this age range were nearly the same as reported for all adult men, except that poor health and physical limitations was perceived to be a major barrier (21%). For men who were younger (16-24 years), again, the most reported barriers for this age range were nearly the same as those reported for all adult men, except that a lack of money was perceived to be a major barrier (23%). For both genders, barriers were relatively similar between the lowest and highest income brackets, but with major differences seen in poor health and physical limitations being a problem for both women (lowest = 19%, highest = 9%) and men (lowest = 24%, highest = 5%).

With regards to environmental barriers, results from the Marmot Review ‘Fair Society, Healthy Lives’ (2010) indicated that improvements in access to good quality open and green space as well as recreation facilities were needed to help individuals become more active. Other research studies have also found that environmental barriers can include the weather, air or noise pollution, safety, and a lack of sidewalks (Salmon et al., 2003). Recent research points to poor air quality having a profound impact on levels of physical activity (An et al., 2018). A thorough understanding of barriers to physical activity is key to helping individuals understand what challenges they may encounter that prevents them being active. This understanding helps shape physical activity interventions, at multiple levels, and ultimately ensures that such interventions address barriers and take advantage of facilitators that promote activity.

Communicating physical activity guidelines and addressing barriers

Research that has investigated knowledge of the UK Physical Activity Guidelines (Department of Health and Social Care, 2011) by the general public has shown that only 18% of individuals are aware of them, with individuals who are younger, women, employed, have

attained higher levels of education, and in good health being more likely to recall them accurately (Knox et al., 2013). Only 2% of individuals stated that physical activity should be effortful. Although improvements in knowledge of the Guidelines have been seen in recent years (Craig et al., 2009), there are many individuals who are less likely to know what levels and types of physical activity behaviours they should be achieving. For instance, greater efforts to communicate information about the Guidelines need to be made to reach older individuals, those who are low-wage workers and those who are unemployed, and individuals living with poor health status. Efforts in how information about the Guidelines is communicated needs to address not only these demographic factors, but also help individuals identify and overcome barriers to being inactive. Messages need to help individuals recognise discrepancies between their own current behaviours and what the Guidelines suggest. By acknowledging and understanding current behaviours, individuals can be better placed to set realistic intentions and set stage specific goals to become physically active. Messages should also help strengthen self-efficacy and help individuals build beliefs in having the ability to be able to reach their set goals and achieve them in an incremental and sustainable manner. Put simply, messages need to capture an individual's attention, be informative, build confidence, and be motivational.

Behavioural theories

Research into the effectiveness of exercise referral schemes has shown that they have not been entirely successful in helping people who are inactive become active (Williams et al., 2007). A systematic review and meta-analysis of 18 studies showed that exercise referral schemes have a small effect, where one person becomes moderately active for every 17 individuals referred to a scheme. Recommendations state that individuals should only be referred to exercise schemes if the schemes are properly designed, where they consider the readiness of change of individual participants, their levels of self-determination to engage in physical activity, and their ability to regulate their physical activity behaviour. Exercise referral schemes also need to help individuals identify and address barriers to becoming active and help them improve low self-efficacy. Such recommendations are in line with research that has explored the correlates and determinants of physical activity (Baumann et al. 2012). But despite the need to help individuals become more active, and achieve recommendations as stated in the UK Chief Medical Officers Guidelines, it should not be forgotten that low levels of activity can have a profound impact on overall health (Warburton & Bredin, 2016). In fact, the greatest impact on decreasing all-cause mortality stems from low levels of activity with only incremental reductions in mortality with increased levels of activity (Lollgen, Bockenhoff, & Knapp, 2009).

For greatest effect, physical activity interventions should be based on sound behaviour change theory (Khan et al., 2002). Below, Social Cognitive Theory (Bandura, 1986) and the Transtheoretical Model (Prochaska & DiClemente, 1986) are described in detail and how they can be applied in a manner to help individuals address important factors associated with physical activity engagement, maintenance, and relapse prevention.

Social Cognitive Theory

Social Cognitive Theory stipulates that people learn by watching others, with development influenced by their environments (e.g., built, natural), their personal factors (e.g., cognition, mood, attitude), and their behaviours (e.g., frequency, intensity, type, time) (Bandura, 1986). Behaviours, personal factors, and environmental factors, referred to as triadic reciprocal causation, are determinants that influence each other and overall learning. Within Social

Cognitive Theory, self-efficacy, the beliefs people have about their capabilities to accomplish particular behaviours, is a central determinant that drives task-oriented behaviour (Bandura, 2004). Self-efficacy can influence multiple factors, including the desired behaviour that is to be accomplished, the goals individuals set for themselves to achieve their desired behaviour, the outcome expectations for their desired behaviour, and how they view sociocultural factors that influence their desired behaviour. To date, given the success of Social Cognitive Theory in promoting physical activity, it has been one of the most studied theories in the field (Beauchamp, Crawford, & Jackson, 2019).

With respect to goals, people with greater self-efficacy set more challenging goals for themselves, are more committed to their goals, and are more persistent in the face adversity (Locke & Latham, 2006). Goals provide a great deal of support to an individual trying to achieve a particular desired behaviour. For instance, goals provide structure by focusing one's attention, effort, and action toward a particular task. Goals also provide the opportunity for feedback, to help individuals ascertain progress with a desired behaviour. In a sense, goals can help individuals know if they've achieved or if they're on track to achieving their desired behaviour. Goals should be set with the person in mind, meaning there is no one-size-fits all goal. Goal setting, especially for those who are physically inactive, should be open to recognise a person's learning process, their incremental progress, and whether they have adopted their desired behaviour in the form of a habit (McEwan et al., 2016; Swann & Rosenbaum, 2018). Goals should also be stage of readiness specific, meaning, that they are aligned with the individual's intentions to engage in the desired behaviour.

With respect to outcome expectations, individuals with greater self-efficacy expect various positive outcomes after accomplishing a particular desired behaviour. For instance, individuals who become physically active expect physical (e.g., improved fitness), social (e.g., increased size and depth of social networks), and self-evaluative (e.g., positive assessment of one's own progress) outcomes. With respect to sociocultural factors, individuals with greater self-efficacy are able to identify and overcome barriers that may impede a desired behaviour and identify and make use of individual and environmental facilitators to help achieve a desired behaviour. For instance, an individual with higher levels of self-efficacy who wants to become more active may be able to identify busy times of the week and use a calendar to organise their time in a potentially more efficient manner. Another example may be a person in an environment that is heavily polluted may be able to locate a gym in their community and go about gaining access to some other indoor facility.

Given the importance of self-efficacy in helping influence desired behaviours, understanding how to strengthen self-efficacy is important (Bandura, 1977). There are four key sources of self-efficacy:

- 1) Past mastery experiences. Individuals who successfully perform desired behaviours will have the beliefs that they can successfully perform those behaviours again. The more successful completions of the desired behaviour, the stronger one's self-efficacy. Unfortunately, self-efficacy can be quite fragile, too, where failures can undermine an individual's self-efficacy. Setting small steps to achieve a desired behaviour may help strengthen one's self-efficacy.
- 2) Modelling or vicarious experiences. Watching other individuals successfully complete a desired behaviour may help strengthen an individual's self-efficacy. Similar to past mastery experiences, watching others fail will decrease one's self-efficacy and may discourage an individual from trying to attempt the desired behaviour.

- 3) Verbal persuasion. Providing individuals with information about how to perform a particular behaviour may strengthen their self-efficacy. Verbal persuasion delivered through positive appraisal can help individuals who believe they have the capability to achieve a desired behaviour.
- 4) Emotional and physiological states. Positive or negative mood states based on successful or unsuccessful experiences associated with the desired behaviour cognitively prime the individual for the next attempt at the desired behaviour. Memories of previous attempts help influence how an individual feels about a desired behaviour. Physiological states, bodily sensations associated with a desired behaviour, may signal to an individual their level of self-efficacy about a particular desired behaviour. When evaluating emotional and physiological states, a critical appraisal of emotional and physiological information is key.

To help ensure individuals improve their self-efficacy over time, and work toward achieving their desired behaviour in a process oriented manner, the use of a stage-wise model is suggested. Using interventions that rely on the Transtheoretical Model (Prochaska & DiClemente, 1986) is one strategy.

Transtheoretical model (incorporate relapse)

The Transtheoretical Model is a set of theories that assess the readiness of individuals to change a desired behaviour and provide a series of cognitive and behavioural strategies, or processes of change, to facilitate adoption of the desired behaviour and prevent its relapse (Prochaska & DiClemente, 1986). According to the Transtheoretical Model, individuals are placed into one of five stages of readiness: precontemplation (a person has no intention to change a desired behaviour); contemplation (a person has an intention to change a desired behaviour in the next 6 months); preparation (a person has an intention to change a desired behaviour in the next month); active (a person has been engaged in the desired behaviour between one and six months); and maintenance (a person has been engaged in the desired behaviour for over six months). Within each stage, individuals conduct a decisional balance, where they consider the pros and cons of engaging in a desired behaviour. When individuals identify more cons than pros with engaging in a desired behaviour, they are less likely to change their current behaviour and are less likely to adopt a desired behaviour. For instance, individuals who identify as being busy and having no time to engage in physical activity, are more likely to identify beliefs (cons) that are prevalent amongst individuals who are in the precontemplation and contemplation stages of behaviour change. These individuals believe there are more reasons to not adopt a desired behaviour than reasons to adopt a desired behaviour. It is only when individuals begin to believe there are more pros, than cons, to adopting a desired behaviour do individuals take active preparatory steps to change their behaviour and move onto another stage of readiness.

To facilitate movement through the stages of readiness, there are 5 cognitive and 5 behavioural processes of change. In essence, with stage progression there is an increase of pros and a decrease in cons (Marshall & Biddle, 2001).

Cognitive processes:

1. Consciousness raising – learning about being physically active and various physical, psychological, and social benefits associated with regular activity.
2. Dramatic relief – experiencing and recognising feelings associated with being physically inactive and what consequences it may have on one's own health.

3. Environmental re-evaluation – becoming aware of how your physical inactivity may have consequences on friends, family, and your community.
4. Self-re-evaluation – creating a new sense of self by becoming an individual who is active.
5. Self-liberation – committing oneself to engaging in regular activity.

Behavioural Processes:

1. Counter conditioning – making substitutions for sedentary activity with physical activity.
2. Helping relationships – getting social support to become active.
3. Social-liberation – recognising and taking advantage of social customs to become active (e.g., new year's resolutions, bicycle sharing programs, gyms at work).
4. Reinforcement management – rewarding oneself for achieving a desired behaviour.
5. Stimulus control – using reminders to remember to engage in regular activity.

As individuals move through stages, changes in self-efficacy also occur, where self-efficacy increases with each successive stage (Marshall & Biddle, 2002). As people begin to believe in more pros than cons to adopting their desired behaviour, changes are seen in their perspectives toward their own capabilities to enact a desired behaviour. Self-efficacy is also key to helping individuals overcome physical activity relapse (Marlatt & Gordon, 1985). Specifically, when individuals face high risk situations, like being busy, they may stop being active, and relapse into inactivity. After encountering such a high-risk situation, self-efficacy is key to determining whether someone will cope with the situation in an effective manner, whereby they resume the desired behaviour, or an ineffective manner, whereby they grow ever more distant from their desired behaviour. If a person faces a busy situation, choosing an effective coping strategy, like time management and scheduling, may lead to an increase in self-efficacy, where the person will believe in their capability to engage in the desired behaviour because they will have the time to do so. An increase in self-efficacy may lead to an increased chance of becoming active. However, if there is no coping strategy that addresses one's busy schedule, this may have an effect on the individual that results in lower levels of self-efficacy, where they are less likely to believe they can overcome their sense of being busy and engage in physical activity. Low levels of self-efficacy may lead to negative attributions in the form of self-doubt and self-blame and a higher probability of not resuming in regular activity.

Case Study

Stephen is a 65-year old man with a trans history (pronouns he, him, his) who works as a union representative for a large trade union in the healthcare sector. Stephen has been a union activist for over 40 years and has been heavily involved in fighting for LGBT rights throughout his life. Stephen has always remained active despite having a very busy schedule. Part of his physical activity routine has involved daily runs, which have helped manage his stress. Recently, Stephen was diagnosed with ovarian cancer. Despite successful surgery, chemotherapy, and radiation treatment, Stephen doesn't feel like himself. On most days, he can barely get out of bed, let alone go for a walk. Because he is still recovering from his cancer and subsequent treatments, Stephen has been working on a part-time basis until he feels strong enough to return to full-time work. Stephen misses being active and wishes he could get back to running on a daily basis. He feels his inactivity is having a profound impact on his physical and mental wellbeing.

Referring Stephen to an exercise referral scheme may help him begin to address his inactivity. A step by step process, based on exercise counselling, is described below (Gorczyński et al., 2014).

Step 1: Information capture

This step includes capturing demographic information on the individual to help better understand contextual factors that may impact levels of physical activity. This can include age, gender identity, race, ethnicity, sexuality, relationship status, health status, working life, and housing. All of these factors are determinants of physical activity and may play a role in helping someone become and stay active. Information on past and present physical activity behaviours will help the counsellor better plan for the future and what goals to set.

Additionally, obtaining information on readiness to be physically active can help place the individual in one of five different stages of the transtheoretical model (e.g., precontemplation, contemplation, preparation, active, maintenance) to better align behavioural strategies with potential goals. Conducting a decisional balance exercise, where the individual weighs up the pros and cons of changing one's physical activity behaviour, will help examine any ambivalence the individual may have toward becoming active and offer further insight into future sessions and how they might be planned.

Stephen is 65-years old, identifies as a man with a trans history, and is currently recovering from cancer and various cancer related interventions. He appears to be gaining strength with each passing day, while also being mindful of his very heavy work commitments. He has disclosed working long hours in the past where he used running as a source of stress management. He appears to be in the contemplation or preparation stages of the transtheoretical model where he would like to return to running. The information capture stage should be used to better understand exactly how much running Stephen would like to do and also further discussion points may help refine sources of support, should he experience any setbacks.

Step 2: Action planning

This step allows the individual to set future physical activity goals. It calls for a specific, measureable, achievable, relevant, and timely goal (Locke & Latham, 2006). Additional information on goal importance and potential barriers to becoming active will help establish a clear action plan to help achieve the set goal and address identified barriers. Discussing and identifying a support network, those who may be called upon for assistance with overcoming identified physical activity barriers, will reinforce self-efficacy and motivation to become active.

During this step, Stephen's specific running goal should be established. This would include how far he would like to run and for how long. Additional information on running attire and location may be helpful. A discussion of what may come up in his schedule that may prevent him from running would be useful, as would how he would handle any physical or mental health setbacks.

Step 3: Action plan follow up

The third step allows the individual to reaffirm their goal and reasons why it's important to them. Recounting steps taken to accomplish their goal in the past week will help identify whether the action plan was followed. If necessary, adjust the goal and scale it to the needs of the individual. Discussing any barriers that may have come up in the previous week should

help identify any unexpected barriers and address whether new strategies are needed to handle future challenges to becoming active. Again, discussing individuals who may be called upon for assistance helps maintain a strong and helpful network of social support. This step can be done as many times as necessary to help ensure the individual is following the action plan, learning to deal with barriers to activity.

In Stephen's case, understanding whether the action plan was followed is key, as is assessing whether the goal is still important to him. Being mindful of both physical and mental health is also important and whether any health challenges have affected the overall physical activity goal.

Conclusion

Overall, the benefits of physical activity are numerous and well documented and theory based interventions are needed to not only address barriers to but harness facilitators of being active (Warburton & Bredin, 2016). Behavioural strategies used in the context of exercise referral schemes may help individuals gain self-efficacy and set stage-wise goals to become more active. Research shows consistently that any attempt to help individuals become more active needs to be rooted in a sound understanding of behavioural theory.

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