

EXAMPLE 2

Supporting Behaviour Change

Rationale

The benefits of engaging in regular physical activity for general health and wellbeing purposes are widely documented (Warburton & Bredin, 2017). For older populations, regular physical activity is arguably more important to prevent or delay physical health decline associated with a natural ageing process. Sarcopenia for example is characterised by age-associated muscle deterioration, leading to increased frailty, increased risk of falls and fractures, and a reduced ability to independently perform activities of daily living (ADLs) (Langhammer et al., 2018). Further, whilst not part of the normal ageing process, the prevalence of affective disorders including depression increase with age (Batten, 2019). This can be attributed to a range of factors, including but not limited to a loss of independence, changes to social supports, polypharmacy, and the presence of physical commodities. Despite the well-known benefits of regular physical activity, 1 in every 4-5 adults remain physically inactive, or demonstrate activity levels lower than the current World Health Organisation (WHO) recommendations (Cunningham & O' Sullivan, 2020). It is also worth noting the negative impact of a global pandemic on the physical activity levels of elderly. Increased vulnerability to the COVID-19 virus has led to strict stay-at-home orders for those aged 70+ years living in the community, as well as strict precautions and limited internal movements across residential aged care facilities (RACFs). The consequence is an estimated 53% further drop in physical activity levels among those aged 70+ years (Central Statistics Office, 2020). The net effect is often a reduced quality of life and higher care needs for the individual, which places added strain on an already overworked community and residential aged care sector. With this in mind, supporting behaviour change among elderly populations to maintain, or increase levels of physical activity is critically important to promote and maintain independence, reduce acuity of care, prevent or delay placement into residential aged care, and support the general health and wellbeing (both physical and psychological) of older individuals.

Critical Review

What seems clear is that one needs to understand the maintaining factors that drive an unhealthy behaviour (i.e., a sedentary lifestyle), to then match the most appropriate behavioural-

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change technique (BCT) (Tomlin & Asimakopoulou, 2014). Several well-known behavioural change theories including the Health Belief Model (Rosenstock, 1974), the Social Cognitive Theory (Bandura, 1997), the Transtheoretical Model (Prochaska, Johnson, & Lee, 2009), the Theory of Planned Behaviour (Ajzen, 1991) and Self-Determination Theory (SDT) (Deci & Ryan, 2000) have all been applied to the physical activity domain specific to the population of older adults (Morgan & Maw, 2018). In a review of RCTs studying PA behaviour change in older adults, Gourlan et al. (2016) states no one theory to be superior in terms of effect. The authors do state however, that interventions based on a single theory are more effective than those underpinned by multiple theories (Gourlan et al., 2016). One is SDT, which has been applied heavily within the physical activity domain of behaviour change (Gourlan et al., 2016; Morgan & Maw, 2018). SDT assumes 3 different types of motivation: *amotivation* (e.g. "I have no motivation to begin an exercise regime), *extrinsic motivation* (e.g. I wish to exercise so I am viewed in a better light by others) and *intrinsic motivation* (e.g. "I wish to exercise for my own health and wellbeing") - each of which affect behaviour differently (Deci & Ryan, 2002). Greater adherence to long term behavioural change lends itself to being intrinsically motivated, that is, motivation in its most self-determined form (Morgan & Maw, 2018). SDT-based motivational profiles (understanding an individual's motives) have in fact been effective in predicting whether an older individual takes up or maintains physical activity in retirement (Beck et al., 2010). By adopting BCTs and providing an environment that fosters the 3 basic psychological needs of *autonomy, competence* and *relatedness*, SDT postulates that self-determined motivation can be promoted and obtained (Morgan & Maw, 2018). Lee et al. (2016) applied such SDT-based strategies in their study that tested the effectiveness of an exercise program in a small population of older Korean adults. Autonomy was fostered by offering participants choice over their preferred exercise type and intensity, whilst providing meaningful rationale regarding all options (Lee et al., 2016). Competency was fostered by regularly sharing participants' results, via objective measures including body composition analysers and blood pressure readings, as well as encouraging and assisting participants to develop individual goals and plans (Lee et al., 2016). Relatedness was fostered by recruiting participants within the same residential district, which allowed for a small group exercise program and social connectedness among participants. Rapport was also built between researchers

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and participants via organised social gatherings every 3-4 months to discuss matters and share news outside of participants' experiences during the intervention (Lee et al., 2016). Whilst there is an abundance of research that adopts theoretical underpinnings to understand why older individuals may or may not engage in health promoting behaviours including exercise, few studies incorporate those same theoretical perspectives into the design and examination of specific behaviour-change interventions. Lee et al. (2016) however, demonstrate that SDT-based interventions have a positive effect on exercise adherence, physical fitness and quality of life of older individuals. Similar research was conducted by Van Hoecke et al. (2014), who showed that an SDT-based intervention was more effective in encouraging older sedentary adults to walk more, when compared to simply referring to an exercise program or prescribing a structured walking program.

More broadly, there is research to support the types of motivation that correlate with long term adherence to physical activity recommendations in older adults. Both intrinsic motives (e.g. enjoyment), and self-determined extrinsic motives (e.g. social/emotional benefits correlate with the highest levels of PA in older adults (Dacey et al., 2008). This is important for health professionals when implementing and supporting BCTs with older adults, to draw links to such motives when supporting planning and goal setting. Interestingly, converse to what has been found among younger adult populations, weight management and appearance (nonself-determined extrinsic motives) are negatively correlated with long term PA adherence in older adult populations (Kirkland et al., 2011). Another key consideration is to acknowledge that what an individual values, changes and transforms with age. For example, a young adult may view their physical health as a priority, to achieve longevity and quality of life. An older adult living with physical comorbidities, however, may value social interaction and quality time with loved ones. For the health professional, it is then a matter of drawing links between the health promoting behaviour (increased physical activity) and the social/relational consequences of adhering to such change (e.g., maintaining a physical capacity to negotiate the staircase required to access a relative's home).

Potential Barriers

Illustrating potential barriers to increasing physical activity in older adults can be seen using the COM-B model, a more recently developed behavioural framework by West and Michie (2020). The framework understands behaviour change to consist of 3 interrelated components: capability, opportunity and motivation (West & Michie, 2020). Capability refers to the physical and psychological skills required to engage in the target behaviour. Opportunity refers to the physical and social environment being such that the individual feels capable. Motivation refers one's internal drive, habits and planning, all said to underline the execution of any behaviour. The majority of the literature, particularly surrounding behaviour change in younger populations, speaks mostly to the concept of motivation as the primary barrier to change. For older populations however, capability and opportunity can be equally as problematic. Capability barriers may include physical limitations associated with long term injuries, natural ageing (e.g. increased frailty) or co-occurring illness (e.g. lower limb wounds or sensory loss secondary to diabetes). Conditions associated with cognitive decline (including Alzheimer's and other forms of dementia) are also increasingly prevalent with age and hinder an older adult's capability to initiate and maintain healthy behaviour change. For older individuals, issues related to the opportunity domain can include environmental barriers such as the presence of, or quality of footpaths, the presence of rest areas to sit down, and weather or temperature extremes. Such examples are environmental attributes that together with capability, make possible or facilitate a behaviour. Motivation as a barrier to behaviour change, has discussed previously, has been researched extensively. The concept of autonomous versus controlled motivation has been discussed to highlight motivational barriers to behaviour change in older adults (Klussman & Notthoff, 2018). Autonomous motivation is seen as motivation derived internally, which can also include motivation from extrinsic sources when the individual sees how an activity aligns with their sense of self (Deci & Ryan, 2002). Higher profiles of controlled motivation, however, are comprised by external regulation where one acts for external rewards or for fear of punishment (Deci & Ryan, 2002). The later form is linked to poor adherence to long-term behaviour change and is commonly identified among inactive older adult populations (Dacey et al., 2008). For example, an 80-year-old man whose motive to attend

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weekly exercise class is by external recommendations to manage lower limb oedema is far less likely to adhere to the behaviour long term. Interventions then, should seek to increase autonomous motivation by targeting the earlier mentioned 3 psychological needs of *autonomy, competence and relatedness*. It is also important to acknowledge that motivation exists on a continuum and that an older individual's motivation profile can change and be shaped over time. Utilising the above example, the 80-year-old man's motives to attend exercise class may initially be driven externally (controlled). With time however, he may feel a sense of autonomy through his ability to attend exercises on a preferred day or time. He may also begin to feel a sense of competence as he draws an association between increased physical activity and reduced swelling in his legs. Finally, the man may feel a sense of relatedness through social connections formed at the exercise group. All factors that with time, may build a sense of intrinsic (and autonomous) motivation.

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GENERAL COMMENTS

Instructor

[REDACTED], yours is a beautifully written introduction. I do think your last sentence should have come first or perhaps by way of a heading. It took me a long time to work out which population and what behaviour change.

I think you needed to narrow your focus to perhaps those who presently are depressed and sedentary. Presently it reads like all older adults. There is also a dose-response effect. Whilst all exercise is by and large good... what is the optimal dose for the health benefits you are referring to and at what age? There is research on this around mood and also on cardiovascular risk factors and all-cause mortality.

I think you did a great job theoretically grounding your ideas. I do suggest that when citing research do so with a critical lens.... Consider the strengths and weaknesses, sample size etc. For example I am left wondering about Lee et al's (2016) study... How old was old?... what factors made the difference... what were the outcomes... were they sustained.... what was controlled etc. What was the dose of the activity / exercise? Walking more sounds good but how much more?

I think the barriers section was a little less developed but as you illustrated barriers are explicitly addressed in some models of behaviour change.

A really nice read.