Disability and physical activity in youth with disabilities: establishing healthy behaviours to last a lifetime

Engaging people with disabilities in active and inclusive physical activity has long been a concern for health professionals and educators in different parts of the world (Rimmer and Rowland 2008, Shields et al 2012, Verschuren et al 2012). Adverse health conditions such as obesity are related to inactivity which has become a world-wide public health crisis and often disproportionately affects people with disabilities as compared to non-disabled populations (Centers for Disease Control and Prevention 2014, Bandini et al 2005, McDonald 2002, Rimmer et al 2007, Rimmer et al 2010). In the most recent New Zealand Disability Survey (Statistics New Zealand 2013) approximately 24 percent of the population was identified as having a disability, defined as "being limited in their ability to carry out everyday activities by at least one impairment type". The survey also provided evidence that the incidence of disability in the population increases with age. This statistic underscores the importance of promoting healthy behaviours such as physical activity in youth with disabilities who may be more likely to continue engaging in these activities throughout their lives. Establishing healthy behaviours early in life is key to maximizing the likelihood of continued long-term participation.

When investigating options for physical activity that are accessible to youth with disabilities, several factors become important to consider, including motivation, accessibility and social inclusion. Ensuring that the activity is engaging and interesting to the youth is a critical first step in physical activity initiation. If they are not interested in the activity, it is likely they will not want to perform it, and it is even less likely that they would continue the activity independently at a later time. Ensuring that the activity is accessible is another important step in promoting the activity for long-term use. Accessibility can include physical accessibility (i.e., activities that can be performed in adapted forms by people with different functional abilities) as well as programmatic factors (i.e., determining whether the activity is offered in community-based settings in an accessible form). Financial factors, such as whether the activity is affordable for the individual is yet another consideration. Social inclusion is especially important for long-term maintenance of physical activity, since peer support can help to motivate and sustain participation. Youth with disabilities may feel isolated because of traditional physical activity barriers, and social inclusion may therefore make the difference between the youth choosing to participate or sit alone on the sidelines.

One broad illustration of the types of factors involved in promoting physical activity among youth with disabilities can be found in Rowland et al (2015). This article describes a conceptual model that addresses physical activity barriers and accessibility issues that are influenced by domains from the World Health Organization's International Classification of Functioning, Disability and Health (ICF) (World Health Organization 2015). Specifically, this model focuses on active video gaming (AVG) as a solution to potential physical activity barriers that are categorized within the "impairments" and "activity and participation" domains and the contextual factors involving the "person" and the "environment". Health-related outcomes are an important part of this model as well. Traditionally, physical activity accessibility has been limited for youth with physical disabilities, given this population's generally low cardiovascular endurance and physical limitations, such as decreased motor control, range of motion, muscle strength, ambulatory status, and balance (Rimmer et al 2007, Rowland and Rimmer 2012). Many AVGs may be used by youth with balance problems, limited lower extremity movement, or poor motor control (Wiemeyer 2015). Other AVG adaptations may include changes made to game controllers or options for seated play while performing moderate to vigorous exercise in homes or community environments. Age, gender, and cultural considerations represent personal factors that may play a role in game selection and potential satisfaction. Therefore, relevant health-related outcomes may include physical activity motivation leading to long-term adherence. Health benefits include increased functional independence, cardiovascular endurance, leading to decreased chronic disease and secondary condition risks (Deutsch et al 2008, Howcroft et al 2012, Li et al 2009, O'Donovan et al 2014, Robert et al 2013, Rowland and Rimmer 2012). Social inclusion may also be increased and represent activity and participation outcomes potentially affected by AVG play.

Although AVGs are just one type of accessible physical activity for youth with disabilities, many opportunities exist for health professionals and educators to become leaders in the integration of health promotion and fitness strategies for these youth (Rowland et al 2015). For example, the American Physical Therapy Association's Section on Pediatrics convened a task force to examine the scope of paediatric physiotherapy practice in health promotion and fitness for youth with disabilities. This task force concluded that physiotherapists should play an active role in designing and implementing accessible fitness and health promotion programmes for youth with disabilities. Specifically, the task force stated that these programmes are important to promote active, healthy lifestyles and reduce co-morbidities associated with sedentary behaviours and unhealthy weight, which are often seen in youth with disabilities.

In conclusion, identifying accessible, engaging exercise options for youth with disabilities is a worthwhile cause that has the potential to promote healthy lifestyle choices for youth with disabilities who often have few physical activity options. Let's work together to promote healthy behaviours to last a lifetime.

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