

**Move Your Mood: A Wholistic Evidence-Based Approach to Enhancing Mental and
Physical Well-Being in Adolescence**

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Abstract

Adolescence can be a stressful and difficult period in an individual's life and, and as such programs which support adolescents throughout this period are crucial. Move Your Mood is a program which seeks to enhance adolescent well-being through pillars that touch on multiple aspects of an individual's life. These pillars focus on improving the ability to be present and mindful (Practice Mindfulness), encouraging physical activity (Move Your Body), maintaining a well-balanced and nutrient rich diet (Fuel Your Body) and building positive coping strategies (Expand Your Mind). Each of these pillars were developed from and continue to be supported by a strong evidence base for how each of these habits are beneficial to adolescent well-being. The current literature review discusses recent research regarding the impacts these pillars can have on adolescent well-being. Each pillar provides unique benefits to mental and physical well-being for adolescents, and teaching youth these beneficial practices allows them to continue to utilize them throughout their lives, demonstrating the importance of the Move Your Mood program.

Keywords: Adolescence, Well-being, Physical Activity, Mindfulness

Move Your Mood: A Wholistic Evidence-Based Approach to Enhancing Mental and Physical Well-Being in Adolescence

Adolescence is a period of an individual's development which is characterized by a multitude of physiological, social, and environmental changes, and understandably, these changes can be very stressful for many (Binning et al., 2021; Bluth et al., 2016; Bluth & Eisenlohr-Moul, 2016; Ramseyer Winter et al., 2019). As individuals enter this period of their lives, they often experience changes in self-concept regarding their relationships and personal competencies, an increased desire for autonomy from parents, and more (Daddis, 2011; Shapka & Keating, 2005). These changes may present challenges that increase vulnerability to the development of mental health issues that can persist through adulthood (World Health Organization [WHO], 2021). With this in mind, adolescence is a pivotal period for developing healthy habits to defend against these issues (WHO, 2021).

Move Your Mood is a program developed by Alberta Health Services (AHS) with the aim of inspiring individuals to be active and healthy for life by engaging in healthy lifestyle practices to improve mental and physical well-being (Move Your Mood, 2011). Move Your Mood supports and enhances well-being through pillars that touch on multiple aspects of an individual's life. The main four pillars are Move Your Body, Fuel Your Body, Expand Your Mind, and Practice Mindfulness. Move Your Body focuses on the importance of being physically active and encouraging individuals to regularly exercise in a variety of different ways and with others. Fuel Your Body focuses on the benefits a well-balanced diet with nutrient rich foods can have on mental and physical well-being and teaching individuals how to make easy and convenient recipes that they can continue to make at home. Practice Mindfulness focuses on teaching techniques to encourage individuals to be mindful and present with their emotions and

experiences. Finally, Expand Your Mind focuses on simple, everyday practices which promote positive coping.

During a typical Move Your Mood session, each of these pillars are addressed. For example, a program may begin with a brief mindfulness practice (e.g., belly breathing) to focus the attention of the group. This would be followed by an activity to get the group moving. This may be a highly physical game like dodgeball, or a more gentle activity such as a nature walk. Next the group will often make and enjoy a nutritious snack together. While enjoying the snack, the group may practice an activity that touches on the Expand Your Mind pillar, such as a discussion about what each person is grateful for. While these are activities that may be practiced during a Move Your Mood program, they are all activities that can be practiced outside of the program as well.

Typically, programs run for eight weeks during which each of the pillars are addressed in multiple ways. Move Your Mood began with being supported by a research study conducted by Oddie, Fredeen and colleagues (2014) which found that 8 weeks of physical activity (PA) in Move Your Mood resulted in significantly reduced depressive symptoms, improved mood, improved coping ability, and increased motivation to exercise. This research supports the efficacy of Move Your Mood and specifically the Move Your Body pillar. Further, qualitative responses from participants showed that the program is well received, with the youth stating that they enjoyed the opportunity to make new friends, try new activities, and that it built their confidence (Oddie et al., 2014). Upon the conclusion of the research study, Move Your Mood was adopted as a program within Alberta Health Services Addiction and Mental Health and the Move Your Mood Coordinator position was developed. The program has now been running in Red Deer since 2011, using recreational centres and other local facilities to run the programs.

Since then, the Move Your Mood program partnered with the Central Alberta Child Advocacy Centre to create a Move Your Mood studio, providing a space for sessions to be run. The studio features a large open space for children and youth to play, a number of devices and equipment used to facilitate physical activity, a kitchen, a sensory room, and more. The studio is within the Sheldon Kennedy Centre of Excellence which houses multiple organizations working together to support children and youth. These organizations include: Alberta Health Services Child & Mental Health and Addiction Services, AHS Step up Step Down Program, the Central Alberta Child Advocacy Centre and the Central Alberta Sexual Assault Centre. The Move Your Mood studio is accessible to all these organizations to utilize, allowing children and youth accessing the services to learn about and benefit from the Move Your Mood pillars.

The program has taken the 8-week model and developed additional programs for other target populations including: postpartum mothers, adults accessing mental health and addiction services, women in recovery, and older adults (Move Your Mood, 2011). Each of the pillars and the accompanying activities to address them are built upon a body of supporting research evidence illustrating how they can enhance well-being in each of these groups. The current review focuses on how each of the pillar's benefit adolescents, as this is one of the Move Your Mood program's most served populations. The program was initially developed based on evidence that supports the benefits of each of the pillars, however research is always evolving. As such, the current review focuses mainly on research that was published within the last 10 years (2015 and later) to reflect the current body of literature.

Practice Mindfulness

Mindfulness is often referred to as enhanced attention to current experiences, especially with an open sense of acceptance (Brown & Ryan, 2003). Being mindful can evoke various

positive outcomes such as reduced rumination, improved life satisfaction, enhanced resilience, and more (Bluth & Eisenlohr-Moul, 2017; Bluth, Gaylord et al., 2016; Galla, 2016; Razza et al., 2021; Volanen et al., 2020). A typical Move Your Mood session may begin with five minutes of a brief mindfulness practice to focus the attention of the group. For example, the group may engage in a five senses practice in which the adolescents are asked to identify things in the room that they can see, hear, smell, touch, and taste. Mindfulness activities practiced in Move Your Mood are specifically tailored to fit the needs and desires of the age demographic. For example, because mindfulness activities that center around more tangible elements are easier for younger adolescents to connect with (Bluth et al., 2016b), sessions often begin with a body scan in which youth are guided to direct their awareness to different parts of their body. Practices like this are simple and can be done anywhere and at any time of the day, which is important as it has been shown that adolescents prefer practices that can fit into their daily routines (Bluth et al., 2016b). Beginning a session with a mindfulness practice that the youth can more easily understand and engage with starts the session off strong, instilling a sense of calmness and creating connections amongst the adolescents.

Practicing Mindfulness Improves Well-being

A strong relationship between mindfulness and well-being for adolescents has been reported in the literature. Specifically, mindfulness defends against threats to well-being and bolsters positive well-being. Multiple studies have shown a reduction in depression and anxiety symptoms among youth following a mindfulness program (Bluth et al., 2016a, 2016b; Gomez-Odriozola & Calvete, 2021; Johnson & Wade, 2019a; Volanen et al., 2020). Being present in the moment and noticing internal physical sensations interrupts rumination and protects against negative thought cycles (Bluth & Eisenlohr-Moul, 2017; Galla, 2016). Other negative cognitive

processes, such as perfectionism, can be interrupted as well, as Olten-Weber and colleagues (2020) showed decreased perfectionism among gifted youth following a mindfulness program. Practicing mindfulness can also decrease adolescents' perceived stress and improve their ability to manage that stress (Bluth & Eisenlohr-Moul, 2017; Bluth et al., 2016b; Galla, 2016; Mrazek et al., 2019). Numerous studies have also shown that practicing mindfulness can build adolescent resiliency (Bluth & Eisenlohr-Moul, 2017; Razza et al., 2021; Volanen et al., 2020). In addition, mindfulness has been associated with increased life satisfaction and increased positive affect (Bluth et al., 2016b; Galla, 2016).

How Does Mindfulness Improve Well-being?

Though the many benefits of practicing mindfulness are apparent, the exact mechanism through which mindfulness improves well-being remains somewhat unclear. Studies using functional magnetic resonance imaging (fMRI) have sought to reveal the neurobiological mechanisms through which mindfulness works. For example, one study explained that different neural networks are responsible for different mental states (i.e., mind wandering vs. focus) and that the ability to more efficiently switch between these states may explain how mindfulness improves well-being (Marusak et al., 2018). Marusak and associates (2018) explain different neural networks responsible for self-referential processes, attentional focus, and present moment awareness, and found that that youth who displayed higher dispositional mindfulness tended to show more transitions between these networks than less mindful youth. This suggests that these youth may be able to more efficiently switch their focus away from harmful thought patterns and toward more present moment awareness. Results also showed that youth who possessed higher dispositional mindfulness also tended to be less anxious, suggesting that the improved ability to switch between states may prevent individuals from getting stuck in negative thought processes

that lead to feelings of anxiety. These findings highlight the connections between mindfulness, neurological and cognitive processes, and well-being.

Mindfulness may improve well-being through enhanced self-regulation, as practicing mindfulness can increase an individual's ability to regulate their negative thought processes and instead focus on the present moment (Zhang et al., 2022). Long-term self-regulation refers to an individual's ability to plan for the future and work toward achieving their goals whereas short-term self-regulation refers to more immediate aspects of an individual's self-regulation, such as their ability to calm themselves down and refrain from fidgeting, as well as the ability to complete short-term goals (Razza et al., 2021). Research has demonstrated that practicing mindfulness can improve both long term self-regulation (Razza et al., 2021; Zhang et al., 2022), and short-term self-regulation, with adolescents showing a stronger ability to manage their cognitions and emotions in the moment (Coholic et al., 2023; Martinez & Zhao, 2018; Mrazek et al., 2019; Siffredi et al., 2021; Zhang et al., 2022). Finally, improved self-regulation may lead to increased self-compassion, offering another explanation for how practicing mindfulness may improve well-being (Zhang et al., 2022).

Mindfulness and Self-Compassion

Self-compassion consists of three major components, self-kindness, common humanity, and mindfulness (Neff, 2003). These are paired with opposing uncompassionate components, self-judgment, isolation, and over-identification, respectively (Neff, 2003). Self-kindness involves treating oneself with understanding and kindness rather than judging oneself, common humanity involves understanding one's own suffering is part of the larger human experience of shared suffering as opposed to feeling isolated, and mindfulness involves being aware of one's thoughts and viewing them in a balanced way rather than over-identifying with them (Neff,

2003). Several studies have demonstrated that mindfulness programs can in fact improve self-compassion (Bluth & Eisenlohr-Moul, 2017; Bluth et al., 2016b; Galla, 2016; Razza et al., 2021; Zhang et al., 2022). Zhang and colleagues (2022) found that increases in both short- and long-term self-regulation lead to greater self-compassion, and specifically, that short-term self-regulation protects against the negative aspects of self-compassion (i.e., self-judgment, over-identification, and isolation) and long-term self-regulation promotes the positive aspects of self-compassion (i.e., self-kindness, common humanity, and mindfulness).

Research has shown that increased self compassion evoked by mindfulness interventions have been accompanied by increases in life satisfaction and positive affect, and reductions in anxiety, perceived stress, depressive symptoms, rumination, and negative affect (Bluth et al., 2016; Galla, 2016). Additionally, Bluth and Eisenlohr-Moul (2017) demonstrated that as self-compassion increased, so did resiliency, curiosity, and exploration. Despite not yet fully understanding the exact mechanisms through which mindfulness improves well-being, the benefits to the practice are evident and therefore mindfulness is valuable to include in programs that seek to enhance adolescent well-being.

The Impact of Age and Recommendations

With the importance of mindfulness being clear, research can shed light on the best ways to teach it to adolescents. Many mindfulness programs have been adapted from adult programs to be more appropriate for an adolescent audience and have been shown to be effective (Bluth et al., 2016b; Bluth & Eisenlohr-Moul, 2017). However, research points to the importance of tailoring mindfulness programs to a more specific and tighter age range, as mindfulness programs delivered to younger adolescents have had mixed results, and mindfulness is often found to be more beneficial for older adolescents (Bluth & Eisenlohr-Moul, 2017; Gomez-Odrizola &

Calvete, 2021; Johnson et al., 2017; Johnson & Wade, 2019a; Volanen et al., 2020). For example, one study found a mindfulness intervention had the strongest positive impact on older adolescents (16- to 18-years), as this group evidenced decreases in depressive symptoms and improved social self-concept, whereas younger adolescents demonstrated increases in depressive symptoms (Gomez-Odrizola & Calvete, 2021). Other research corroborates this finding as well, with studies finding increases in self-compassion and decreases in depression and anxiety symptoms for high school students, but not for middle school students (Bluth & Eisenlohr-Moul, 2017; Johnson & Wade, 2019a). As practicing mindfulness may evoke negative feelings (Tumminia et al., 2022), these findings may suggest that younger adolescents may have not yet built up the necessary resources to manage these feelings and may therefore be unable to reap the benefits that practicing mindfulness can provide (Gomez-Odrizola & Calvete, 2021).

As mentioned, adolescents may experience negative feelings while practicing mindfulness, as the process encourages self-reflection (Tumminia et al., 2022). During a six-day mindfulness retreat, Tumminia and colleagues (2022) conducted focus groups immediately following sessions to explore adolescents' experiences while practicing mindfulness. While participants did report increases in well-being (e.g., feelings of acceptance and comfort), they also reported emotional and cognitive distress including feelings of sadness or frustration and experiences of restlessness and rumination. These results highlight the importance of ensuring that the delivery is appropriate for the age group, and as such, researchers have made suggestions for how to do so (Bluth et al., 2016a; Gomez-Odrizola & Calvete, 2021; Coholic et al., 2023; Johnson & Wade, 2019b; Tumminia et al., 2022).

Some studies on mindfulness with adolescents also include responses from the participants regarding their opinions on the process and how it could be improved for the

younger audience (Bluth et al, 2016b; Coholic et al., 2023; Tumminia et al., 2022). These responses often reflected that adolescents value the fun and social aspects of practicing mindfulness with a group (Coholic et al., 2023). Additionally, adolescents reported appreciating more concrete practices such as a self-compassionate body-scan (Bluth et al., 2016b). Adolescents also reported feeling as though they would be better able to practice mindfulness daily if they were provided with informal practices that could be done quickly and be incorporated within their daily routine (Bluth et al., 2016b). The ability to incorporate mindfulness into daily practice is important, as results from a study by Volanen and colleagues (2020) showed that at the 26-week follow-up, adolescents who reported daily practice of mindfulness had significantly increased resilience scores than those who did not consistently practice. In another study in which mindfulness was delivered in a classroom setting, many participants reported feeling uncomfortable with closing their eyes during the practice (Johnson & Wade, 2019a). Overall, it is evident that mindfulness practices for adolescents should emphasize delivering the mindfulness flexibly and in a way that students will feel safe and comfortable while practicing (Bluth et al., 2016a; Johnson & Wade, 2019a).

To ensure that the adolescents feel safe and comfortable, it is imperative that a relationship is formed between the youth and the facilitator (Bluth et al., 2016a). Throughout the typical eight weeks of Move Your Mood, adolescents will build a relationship with one another, as well as with the coach, meaning that the environment becomes an increasingly safe space for the youth in the program. The wide array of mindfulness techniques that are practiced within Move Your Mood provide adolescents with an opportunity to find a method they feel comfortable with and can implement in their daily lives, which is one of the major strengths of the program. In this way, Move Your Mood benefits adolescents during their participation in the

program and teaches them tools that they can continue to use long after the program ends.

Additionally, beginning a session with practicing mindfulness allows adolescents to be more in tune with their bodies as they participate in the subsequent movement activity.

Move Your Body

Move Your Mood encourages daily physical activity (PA) and provides youth with fun and engaging ways to do so. This program provides adolescents with many ways to get active, featuring a different form of physical activity each week, which they may not otherwise be exposed to through traditional physical education (PE) or organized sport. The type of physical activity that children and youth participate in is determined by their age, interests, and abilities. PA that may be practiced during a typical 8-week Move Your Mood program may include creative play that develops basic physical literacy skills, interactive games that create group connection, or sports activities like badminton, tennis, or swimming. Outdoor activities like nature walks, mindful movement such as yoga, fun group exercises such as spin, circuit training, and resistance training, or the use of devices known as exergames are also commonly practiced. These options provide opportunities for youth with varying interests and degrees of motivation towards PA to find activities that they find enjoyable. This is important as individuals are more likely to continue an exercise program if they find it enjoyable, and developing these habits during adolescence may lead to lifelong involvement in PA (Teixiera et al., 2022; Tompkinson et al., 2009).

Guidelines and Current Habits of Canadian Youth

The Canadian Society for Exercise Physiology (CSEP, 2023) makes recommendations for the appropriate amount of physical activity that Canadians should be engaging in every day. For children and youth aged 5 to 17 years old, the CSEP guidelines recommend an accumulation

of at least 60 minutes of moderate- to vigorous- physical activity (MVPA) per day. It is recommended that this is accompanied by several hours per day of a variety of light physical activities and that PA should occur in a range of environments (e.g., indoor or outdoor) and contexts (e.g., sport or active transportation). Guidelines regarding sedentary time (ST) are also made, recommending children and youth engage in no more than two hours of recreational screen time per day. Lastly, recommendations for adequate sleep are provided, encouraging consistent sleep and wake times, with 9 to 11 uninterrupted hours for children 5 to 13 years and 8 uninterrupted hours for youth 14-17.

ParticipACTION (2024) releases report cards on physical activity for children and youth based on a comprehensive review of current research on PA habits of Canadian youth and its effects. For the year of 2023, it was determined that only 39% of Canadian youth were meeting the recommended amount of MVPA per day, and only 27% of youth adhered to the recommended limit of recreational screen time (ParticipACTION, 2024). Astonishingly, only 4% of children and youth were meeting the recommendations for physical activity, screen time, and sleep duration (participACTION, 2024). Low involvement in PA among youth is an issue across many other countries as well (Kalman et al., 2015). In an analysis of data from 32 countries across North America and Europe, Kalman and colleagues (2015) found that most of the youth across all the surveyed countries fell short of the recommendations. Many researchers suggest that increased opportunity for sedentary time involving screens may be the underlying reason for low PA among youth (Benzing et al., 2018; Kalman et al., 2015). It is apparent that effort is needed to support increased PA among adolescents through programs such as Move Your Mood.

Movement Enhances Well-being

The association between PA and physical health benefits for adolescents is well understood and documented, with benefits including lowered adiposity, improved aerobic fitness, improved muscular strength, improved bone health, reduced risk of developing type 2 diabetes and more (Poitras et al., 2016; Saunders et al., 2016; Tompkins et al., 2009).

Accompanying the many physical health advantages are numerous benefits to mental health and well-being. For example, Doré and colleagues (2019) conducted a longitudinal study assessing the association between mental health and participation in organized sports throughout adolescence. The results showed that youth who had any involvement with organized sport throughout their adolescence fared better in terms of their overall mental health than those who were not involved. Other studies have demonstrated that higher levels of PA can improve life satisfaction and self-esteem (Brown et al., 2021; Guddal et al., 2019; Janssen et al., 2017).

Many studies have assessed outcomes of PA level in combination with other movement guidelines (Brown et al., 2021; Janssen et al., 2017). Janssen and associates (2017) demonstrated that youth who met any one of the guidelines experienced higher life satisfaction than youth who did not meet that guideline. Furthermore, this study revealed that the more guidelines that were met, the better off youth were, but that no specific guideline contributed to well-being significantly more than any other. Meeting all three of the guidelines rather than failing to meet any of the guidelines was found to be associated with better mental, physical, and social health. Similarly, Brown and colleagues (2021) assessed the outcomes of adolescents with different combinations of MVPA and ST. Adolescents who displayed high MVPA and low ST evidenced the highest well-being, with higher self-esteem, more resiliency, and more flourishing than adolescents with any other combination of MVPA and ST. Conversely, the participants who displayed the least healthy movement behaviours, with low MVPA and high ST, were shown to

have the poorest well-being outcomes (Brown et al., 2021). It is also important that PA is enjoyable for youth, not only for motivating participation but also for improving well-being. Zulyniak and associates (2020) demonstrated that youth who participated in PA for recreation benefited from it more than youth who participated for purely practical reasons (e.g., transportation or chores), as youth who lacked recreational PA tended to have worse mental health outcomes.

With proven health and well-being benefits resulting from adequate PA, and with only a small portion of youth meeting the current movement guidelines, efforts for the promotion of PA for adolescents, such as Move Your Mood, are essential (Poitras et al., 2016; Janssen et al., 2017; ParticipACTION, 2024; Roberts et al., 2017; Zulyniak et al., 2020). It is also important that there are programs to support continued PA during the transition from childhood to adolescents, as adolescents more often do not meet the MVPA guidelines than children, and involvement in PA decreases as adolescence progresses (Doré et al., 2019; Guddal et al., 2019; Roberts et al., 2017, Zulyniak et al., 2020). It is also important that youth have multiple different options available for PA, as each individual will have varied preferences and needs.

Exergaming

The Move Your Mood studio is equipped with a number of different devices that pair gaming with PA. This includes dance mats in which the user follows rhythmic patterns on a screen by stepping on different arrows with their feet, a light wall in which users need to move quickly to knock out lights, and an iWall which tracks full body movements and is equipped with numerous interactive games. These games can be played individually or as a group and have both cooperative and competitive options. These devices, and others like them, are referred to as exergames and aim to provide a fun and engaging way to get active. Exergaming has been shown

to be as effective in increasing PA for adolescents as other forms of exercise (Gao et al., 2017). Exergaming has been perceived positively by adolescents and may also offer a more enticing form of PA for some than more traditional forms of PA (Faric et al., 2019; Finco et al., 2015). Finco and associates (2015) showed that students with previously low motivation to participate in PE increased in their motivation when given the opportunity to participate in an alternative PE class featuring exergames, and this motivation transferred over to the traditional PE class as well. It was also observed that participating in this exergaming class improved the student's social skills, as they became more collaborative and encouraging of one another as the class went on. Exergames often also feature cognitively challenging elements. For example, another device in the Move Your Mood studio called the SMARTfit system has multiple different game modes, including one in which numbers flash on small screens, and players are tasked with quickly moving to knock out numbers in different multiples, challenging the player with both movement and mathematics. Cognitively challenging exergames have been shown to be effective in improving executive functions (Benzing et al., 2016). In this way, exergames may be even more beneficial than traditional forms of PA, as they can be both physically and cognitively challenging. It is evident that exergaming is a useful tool for motivating youth to participate in PA and is therefore another clear strength of Move Your Mood.

Fuel Your Body

Move Your Mood encourages youth to develop and practice healthy food practices. This includes eating a variety of nutritious foods, preparing food rather than eating pre-packaged meals, and eating and enjoying food with others. The Move Your Mood studio is equipped with a kitchen to support this pillar. During a Move Your Mood session, a group may work together to make nutritious smoothies which can then be enjoyed together as a group. This is an important

element of the program as not only are the youth eating a nutritious snack, but they are also being taught how to prepare a quick and easy meal which they can later recreate at home with their family. Supporting healthy food habits during adolescence is crucial, as adequate nutrition is important for supporting the physical changes associated with this developmental period, as well as promoting better health outcomes later in life (Norris et al., 2022). Additionally, developing these habits and the ability to make appropriate food choices is important during adolescence as this period is often marked by increased autonomy from parents, and youth are given more control over their food choices (Jonsson et al., 2024).

Canada's Food Guide

The Canadian Government makes recommendations for food and nutrition which involve the suggestion of eating plenty of fruits and vegetables, choosing whole grain foods, eating protein, and choosing water over sugary soft drinks (Government of Canada, 2020). Rather than previous guidelines, which focused on specific serving sizes and recommended meeting a daily minimum intake of specific food groups, recommendations now focus on ensuring that a variety of foods are eaten in proportion to one another. The recommendations include making half of the plate consist of fruits and vegetables, with the suggestion of daily intake of dark green vegetables which contain calcium and folate (Government of Canada, 2020). A balanced meal should also consist of a quarter of the meal being whole grains, and the last quarter being a source of protein (Government of Canada, 2020).

Research has shown that adolescents are currently not meeting these recommendations (Hack et al., 2021; Nishi et al., 2018). Hack and colleagues (2021) conducted an analysis on data from the Canadian Community Health Survey (CCHS) and showed that adolescents are consuming fewer servings of fruits and vegetables than is recommended by the Canada Food

Guide. Importantly, the findings also demonstrate that food choices become poorer during the transition to adolescence, with more consumption of foods high in sugar content and with higher saturated and/or trans fats. This demonstrates the importance of programs like Move Your Mood which seek to improve awareness of healthy food practices among this age group. The issue does not just lie with adolescents though, as research has shown that, on average, Canadians of all age groups are not meeting the recommendations for saturated fat, added sugars, and sodium intake (Nishi et al., 2018). Another issue arises with the way in which meals are eaten. Polsky and Garriguet (2021) showed that roughly one in five Canadian adolescents and adults reported eating food prepared outside of the home the previous day. This is important as these meals tended to be less favorable in nutritional value, usually consisting of fewer servings of fruits and vegetables, fewer whole grains, less fiber, and more saturated fats (Polsky & Garriguet, 2021). Move Your Mood equips the adolescent participants with recipes and ways to incorporate healthy habits with their family, and in this way, Move Your Mood not only benefits the participants, but their families as well.

Eating Habits and Well-Being

Physical health benefits of proper nutrition are apparent, but diet plays an important role in mental well-being as well. Both the types of food being eaten and the habits surrounding eating can play a large role in adolescent well-being. For example, one study found that youth who regularly consumed five or more servings of fruits and vegetables per day had significantly better mental health than those who ate less than one serving a day (Huang et al., 2019).

Additionally, Muros and colleagues (2017) showed that youth who adhered to a particular well-balanced diet tended to have higher self-esteem and more positive self-concept than they're peers who did not. In addition to the actual foods being eaten being important for well-being, the habits

surrounding eating are important as well. Rather than looking solely at specific dietary habits such as fruit and vegetable consumption, many studies examine diet and other food-related behaviours in combination with one another (Geraets & Heinz, 2023; Hong & Peltzer, 2017; Jonsson et al., 2024). Other positive food-related behaviors include consistently eating breakfast and regularly eating meals with family (Geraets & Heinz, 2023; Hong & Peltzer, 2017; Jonsson et al., 2014). In contrast to these habits considered in the literature to be healthy or positive dietary habits, eating low amounts of fruits and vegetables, high amounts of added sugar and/or caffeine, rarely eating breakfast, and rarely eating meals with family are considered unhealthy dietary behaviours (Geraets & Heinz, 2023; Hong & Peltzer, 2017; Jonsson et al., 2024). Healthier eating behaviours have been associated with increased happiness, increased life satisfaction, decreased stress and depression symptoms, and fewer psychosomatic complaints (Hong & Peltzer, 2017; Jonsson et al., 2024). Healthy dietary behaviours may affect other behaviours as well (Geraets & Heinz, 2023). Geraets and Heinz (2023) found that those who practiced positive dietary behaviors tended to engage in more frequent health promoting behaviours, like regular PA and tooth brushing. Conversely, those who had the least healthy eating behaviours tended to engage in more risky behaviours like problematic social media use, risky sexual behaviours, and substance use (Geraets & Heinz, 2023).

Importantly, when assessing a range of eating behaviours, Jonsson and colleagues (2024) found a particularly strong link between well-being outcomes and regularly eating breakfast and family meals. This suggests that these behaviours are just as important for well-being as the actual food consumed with the link between regular breakfast consumption and well-being receiving especially strong support (Lopez-Gil et al., 2024). In addition to the previously stated benefits, these behaviours have also been associated with more positive body image in

adolescents (Ramseyer Winter et al., 2019). Eating meals with family has been associated with better mental health outcomes, with greater overall well-being and fewer depressive symptoms for adolescents (Utter et al., 2017). Overcash and colleagues (2020) found that adolescents with families who placed higher emphasis on family meals tended to eat more fruits and vegetables and fewer convenience foods (i.e., delivery meals). Conversely, those who ate alone and those who often watched TV during meals tended to eat fewer fruits and vegetables and more convenience foods (Overcash et al., 2020).

Eating meals at home and with family may also be beneficial in that the food being consumed is of higher quality and it can help to develop adolescents' ability to cook. As preparing meals at home provides greater control of the ingredients being used, youth who more often ate home-cooked meals have been shown to eat more fruits and vegetables (Overcash et al., 2020), fewer ultra-processed foods, and have tended to score higher on measures of overall diet quality (Tucker et al., 2024). Children and adolescents should also be involved in food preparation, as adolescents with the ability to cook often report better eating habits, with higher consumption of fruits and vegetables and less frequent consumption of fast-food meals and sugary soft drinks (Utter et al., 2016). Youth involvement in food preparation may also be beneficial, as youth who had the ability to cook also tended to have better family relationships and mental health (Utter et al., 2016). Given that Move Your Mood can teach adolescents cooking skills and provide them with examples of simple and healthy recipes that they can share with their families, the program sets adolescents up for continued success. As mentioned, while the adolescents are enjoying their snack together, they will usually engage in an activity to touch on the Expand Your Mind pillar. This may help the group create closer bonds with one another and evoke some of the benefits shown to arise from family meals. In summary, there is strong

evidence base supporting the relationship between a wide range of specific dietary behaviours including a balanced diet and eating meals with family, and well-being.

Expand Your Mind

In a typical Move Your Mood session, while the adolescents are eating together, they will do an activity that touches on the Expand Your Mind pillar. The Expand Your Mind pillar centers around simple, positive coping strategies that enhance an individual's mental health (Move Your Mood, 2011). This pillar encompasses a wide variety of activities and practices which can be done both at home and within a Move Your Mood session. Many things align with this pillar and how the pillar is practiced can differ depending on the individual. Practices that expand your mind include journaling, playing music, doing arts and crafts, practicing gratitude, reading, and more. In the current review, creativity, gratitude, affirmations, and kindness are discussed as these are four common ways that the Expand Your Mind pillar is practiced within Move Your Mood and are simple activities that youth can continue to practice at home.

Creative practices of various kinds including drawing (Malboeuf-Hurtubise et al., 2021), writing poetry (Delamerced et al., 2021), and practicing improvisational theater (Felsman et al., 2019) have been shown to increase adolescent well-being. Middle and high school students participating in an improvisational theater class which consisted largely of daily games involving coming up with creative improvisations were shown to have decreased anxiety and an increased sense of self-efficacy regarding social situations (Felsman et al., 2019). Creative practices can also be beneficial outlets for adolescents during difficult times. This is promising as there are many simple and inexpensive ways to promote creativity. A class involving reading and writing poetry was shown to reduce fear, anger, and sadness among pediatric cancer patients, and responses from the patients and their parents indicated that this creative activity provided them

with a comforting distraction from their circumstances (Delamerced et al., 2021). Another simple way that adolescents can express creativity is through drawing. Malboeuf-Hurtubise and associates (2021) delivered a form of art therapy to adolescents re-entering school amidst the COVID-19 pandemic during May and June of 2020, a period which filled many people with fear and uncertainty and found that youth showed a significant decrease in hyperactivity after participating.

Both adults and adolescents alike tend to underestimate the positive impacts that their actions can have, which may inhibit individuals from engaging in acts of kindness (Echelbarger & Epley, 2023). Despite this, adolescents have been shown to have a complex understanding of kindness, including the range of types, antecedents, and outcomes that may be related to acts of kindness (Cotney & Banerjee, 2019). Tashjian and colleagues (2021) found an intervention aimed at encouraging kind acts to significantly increase adolescent's positive affect and decrease their negative affect and perceived stress. However, it is important to note that these findings were only found in adolescents who already possessed higher levels of altruism. Similarly, Binfet and Whitehead (2019) found that a kindness intervention increased adolescent's well-being, but only if they fully committed to the process.

Affirmations involve positive messages that an individual can say to themselves to build a strong mindset (Move Your Mood, 2011). Affirmations have been associated with many benefits including reduction in bullying behaviours (Armitage & Rowe, 2017; Calvete et al., 2021; 2023), increased self-efficacy regarding physical activity (Good et al., 2015), and improvement of academic outcomes including behavioural misconduct at school (Binning et al., 2019; 2021; Goyer et al., 2017;). Self-affirmation has also been shown to be linked with self-esteem as Lannin and associates (2021) showed that youth who use affirmations to deal with

stressful situations tend to have higher self-esteem than those who do not. Interventions that introduce affirmations to adolescents have shown promising benefits in a number of ways (Binning et al., 2021; Goyer et al., 2017). For example, Binnings and colleagues (2021) found that an affirmation intervention reduced instances of behavioral misconduct in schools. Other research has shown that affirmations have reduced instances of relational aggression and cyberbullying among adolescents (Armitage & Rowe, 2017; Calvete et al., 2021; 2023). Academic benefits have been shown as well, with students who participated in affirmation interventions enrolling in more challenging courses (Goyer et al., 2017), and maintaining higher grade point averages than their peers who did not participate (Binning et al., 2021). Finally, evidence suggests that self-affirmation may be an effective means of increasing adolescents' physical activity. Good and associates (2013) found that practicing an affirmation increased adolescent's belief that they could become more active, suggesting that affirmations can be used to dispel anxiety that prevents individuals from engaging in PA.

Practicing gratitude is a factor outlined in Alberta Health Services' Ways to Wellness Toolkit, a program which informs the Expand Your Mind Pillar (AHS, 2015). Outlined in the broaden-and-build theory by Fredrickson (2004) positive emotions such as gratitude benefit individuals by broadening thought processes, which may beget a variety of positive emotions. For example, as an individual thinks about how to express their gratitude to an important person in their life, they may feel pleasant and further build their social bond with that person. Practicing more gratitude has been shown to be associated with perceived emotional well-being and self-worth among Canadian adolescents (Bosacki et al., 2018). Similar results have been found among other cultures as well, with higher gratitude consistently being associated with positive outcomes such as higher life satisfaction, reduced negative affect, and reduced

materialism (Battistella-Lima & Veludo-de-Oliveira, 2024; Li et al., 2023; Shourie & Kaur, 2016). Longitudinal research has also demonstrated this, as Bono and colleagues (2019) found that adolescents with the greatest increases in gratitude across a four-year period showed greater life satisfaction, more prosocial behaviour, and less antisocial behaviour. Interventions aimed at increasing gratitude among adolescents have been shown to increase life satisfaction, friendship satisfaction, positive affect, and have been shown to defend against decreases in well-being during periods of high stress (Armenta et al., 2022; Bono et al., 2020).

Discussion

Move Your Mood sessions begin with a brief mindfulness practice, followed by a movement activity, and then a nutritious snack, and end with positive coping strategies, providing many ways of boosting the well-being of youth. Each pillar is built on and continues to be backed by large bodies of research supporting their efficacy. The interconnected pillars of Move Your Mood can provide a well-rounded sense of well-being to adolescents who practice them. Furthermore, learning about and practicing these healthy habits with others offers a social aspect to the program which is beneficial in its own right.

Wholistic and Interconnected

A major strength of the Move Your Mood program is the fact that it is wholistic in nature. The pillars revolve around different aspects of an individual's life and therefore can provide opportunities to enhance well-being in several ways. The practice of each pillar improves overall well-being and can be used individually at different times in the adolescent's daily life. For example, PA is an important stress release, but cannot always be done in the moment, therefore youth may choose to practice mindfulness in a moment of stress and participate in PA later in the day to boost their mood. While each of these pillars is beneficial on

their own, regularly practicing all of these can be beneficial to multiple different aspects of an adolescent's life. Additionally, Move Your Mood can teach adolescents about the different things they can do to build their well-being even past their participation in the program. Many of the activities in Move Your Mood involve take-home components to encourage the continued practice of each of pillars. For example, adolescents may leave a session having learnt a new recipe to make with their family and a worksheet to record how they feel following each meal. This means adolescents leave the program equipped with a tool kit of techniques they can refer to in times where they need a boost. Through Move Your Mood, an adolescent may learn about the role that food can play in how they feel and develop an improved ability to listen to their internal signals. From this, they may come to understand that if they find themselves losing energy by midday, it may be because they've been skipping breakfast. In this way, Move Your Mood has provided youth with a repertoire of healthy habits that can continue to benefit them throughout their lives.

Although each pillar is distinct and has standalone benefits, the ways that each pillar can be practiced may often overlap. For example, while eating a nutritious snack at the end of a program, the group may engage in a mindful eating practice. Mindful eating simply involves approaching eating with a nonjudgmental awareness of sensations, both physical and emotional (Framson et al., 2009). A mindful eating practice may ask the participants to draw their attention to the taste of the food, satiety cues, or thoughts that occur as they eat (Hendrickson & Rasmussen, 2017). While mindful eating offers another opportunity to practice mindfulness, and therefore reap the benefits from that alone, mindful eating may offer a specific benefit regarding eating behaviours as well. Hendrickson and Rasmussen (2017) found that adolescents who

engaged in a mindful eating practice later displayed less impulsivity regarding food choice than their control group peers.

There are also clear links between the Expand Your Mind pillar and the Practice Mindfulness pillar. Namely, practicing gratitude aligns closely with both. The process of thoughtfully appreciating the people and things in one's life involves becoming more aware. Many mindfulness programs may include gratitude practices and have in fact been shown to increase gratitude (Bluth & Eisenlohr-Moul, 2017). Additionally, the Practice Mindfulness pillar and the Move Your Body pillar can relate to one another through yoga. Yoga involves PA and can contribute to muscle and joint strength and balance (Karisetty & Tiwari, 2019). It can also improve mindfulness, for example through practices involving drawing attention to the breath (Karisetty & Tiwari, 2019).

Another clear link exists between the Move Your Body and the Fuel Your Body pillars. These two pillars both address facets that are widely accepted to contribute to adolescent well-being, both being things that are taught in schools. Despite receiving support through education, both PA and adherence to Canada's Food Guide remains low among Canadian adolescents (Benzing et al., 2018; Hack et al., 2021; Kalman et al., 2015; Nishi et al., 2018; ParticipACTION, 2024). Move Your Mood provides an additional opportunity for adolescents to learn about and practice these healthy habits and does so in a way that provides youth with tangible examples of simple daily practices they can use to incorporate them. Additionally, maintaining healthy eating habits with a balanced diet supports PA. Studies have demonstrated that adolescents who have healthier eating habits, including regularly eating breakfast, engage in more PA (Gereats & Heinz, 2022; Muros et al., 2017; Nishie et al., 2018). While practicing each of the pillars on their own has benefits, it is important to note that evidence has shown that

combining these may be even more beneficial than each pillar on its own (Remskare et al., 2024), another example of the importance of Move Your Mood

Social Support

Although it is not a distinct pillar, a major strength of Move Your Mood is its social element. In the previously discussed study assessing Move Your Mood, focus groups were also conducted to understand participant's thoughts about the program (Oddie et al., 2014). The most predominant theme emerging from the focus groups was that the participants enjoyed the social element of the program. Participants not only reported that they enjoyed the opportunity to get to know new people, but also that they felt supported by the group and by the Move Your Mood coaches. Social support has been suggested to be important to other PA programs as well (Faric et al., 2019; Zulyniak et al., 2020). Zulyniak and colleagues (2020) suggest that a reason for the benefits they found for recreational over non-recreational PA may be because recreational PA is more often done with friends. Engaging in PA with peers may lead to better mental health outcomes than doing so individually. For example, Pluhar and associates (2019) found that athletes who play individual sports were more likely to be diagnosed with anxiety or depression than athletes who play team sports. Similarly, Teh and Krishnan-Vasanthi (2022) found individual sport athletes to have higher perceived stress than team sport athletes. These differences may be attributable to the additional social support that team sports offer to young athletes (Pluhar et al., 2019).

Social support is an extremely important aspect of an individual's well-being, and especially for adolescents as social relationships often become more complex during this stage (Orben et al., 2020). It is also important that adolescents receive social support from a variety of sources including family, friends, and classmates (Castella et al., 2015; Mendonca & Simoes,

2019). Having adequate social support from multiple sources has been related to increases in perceived quality of life and life satisfaction, lower social anxiety, and lower depression among youth (Bi et al., 2021; Mendonca & Simoes, 2019). Move Your Mood provides an opportunity for adolescents to make new friends, expanding their social network further than the friends they can make in school. Additionally, Move Your Mood coaches may also act as an important source of social support for adolescents, especially those who may be lacking other positive adult role models. Research has shown that teachers and classmates are a particularly important source of social support, second only to support from family, but still being perceived as more important than support from friends (Bi et al., 2021). As Move Your Mood involves a coach that may act as a “teacher” and other participants that may act as “classmates” this suggests that the social support received during Move Your Mood is one of the major strengths of the program.

Conclusion

Adolescence is a crucial time in an individual’s life which involves numerous changes that may give rise to a range of difficulties. Interventions aimed at helping adolescents develop healthy habits for the future and increase well-being are extremely important. The four main pillars of Move Your Mood enhance well-being in a variety of ways and are backed by a large body of evidence to support them. Regular PA (Move Your Body), maintaining a nutrient rich and balanced diet (Fuel Your Body), remaining mindful (Practice Mindfulness), and practicing positive coping strategies (Expand Your Mind) are all important ingredients in maintaining and enhancing well-being in adolescents. Further strengths of the program include its wholistic nature and the opportunity that it provides for enhanced social support.

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