2019

Enhancing the Effectiveness of Special Olympics Minnesota's Health Promotion Programming

Avery R. Bajema
Bethel University

Laura Marie Hayes
Bethel University

Kelsey B. Kostreba
Bethel University

Shelly Winslow
Bethel University

ENHANCING THE EFFECTIVENESS OF SPECIAL OLYMPICS MINNESOTA'S HEALTH PROMOTION PROGRAMMING

A MASTER'S THESIS SUBMITTED TO THE GRADUATE FACULTY

GRADUATE SCHOOL BETHEL UNIVERSITY

BY

AVERY BAJEMA, PA-S

LAURA HAYES, PA-S

KELSEY KOSTREBA, PA-S

SHELLY WINSLOW, PA-S

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN PHYSICIAN ASSISTANT STUDIES

AUGUST 2019

ABSTRACT

Nearly 3% of the world's population have an intellectual disability. A link exists between intellectual disability and higher rates of chronic and preventable diseases, which is partially attributed to lack of health education geared toward individuals with intellectual disability. Health promotion programs can provide health-related resources and education. Health promotion programs are often standardized, making it challenging to meet the various learning needs of individuals with intellectual disability.

Special Olympics is the largest organization that provides health-related programming for those with intellectual disability. In Minnesota, the Special Olympics branch known as Health Promotion has reported difficulty with meeting the goal of improving long-term health outcomes for participants through health education. Alongside Special Olympics Minnesota Health Promotion Program organizers, the project team identified three areas for improvement: health curriculum, volunteer training, and program organization.

To make changes to the identified areas, the project team conducted a literature review focused on intellectual disability, health promotion, and Special Olympics. The project team implemented curriculum changes adaptable to different learning styles, increased volunteer competency through training, and improved program flow and planning. Changes were implemented in Special Olympics Summer and Fall Games 2018. Following the program changes, volunteer numbers and program attendance increased from previous years and Health Promotion Program coordinators reported an enhanced participant experience, which suggests the community service project positively impacted Special Olympics Minnesota's Health Promotion Program.

ACKNOWLEDGEMENTS

The project team would like to acknowledge and thank the faculty committee chair, Dr. Wallace Boeve, and committee member, Dr. Katie Bonawitz, for their time and commitment to the project with Special Olympics Minnesota.

In addition, the project team would like to acknowledge and thank Special Olympics Minnesota, Hillary Tyler, Carey Bohman, Diane Conlin, and many others for their provision of resources and continued excitement regarding the community service project.

A special thank you to our family, friends, and classmates who were eager to volunteer with the Special Olympics Minnesota Health Promotion Program alongside us.

TABLE OF CONTENTS

LIST OF APPENDICES

Chapter 1: Introduction

Introduction

Globally, 200 million people, nearly 3% of the world's population, are estimated to have an intellectual disability (ID) (Special Olympics, 2017b). The rates of chronic and preventable diseases, such as infection, cardiovascular disease, and diabetes, are significantly higher in individuals with ID than in the general population (Batshaw, Roizen, & Lotrecchiano, 2013). The following will discuss the disease prevalence in those with ID, how Special Olympics has addressed disease prevalence among those with ID, and the need for interventional health promotion improvement in Special Olympics Minnesota (SOMN).

Background

An ID is diagnosed during the developmental period of life and is characterized by intellectual and adaptive functioning deficits (American Psychiatric Association [APA], 2013). Individuals with ID often face more health challenges, including a higher incidence of sensory impairments, chronic diseases, and psychiatric disorders than the general population (Batshaw et al., 2013). According to a study conducted in Australia, the health disparity in individuals with a severe ID has led to a decreased lifespan (58.6 years) and a greater financial burden for those with ID and the healthcare system (Bittles et al., 2012; Herz, 2012). In a nation-wide study conducted in Finland, improved access to healthcare for those with ID has shown subsequent increase in lifespan, but disparity is still evident (Patja, Iivanainen, Vesala, Oksanen, & Ruoppila, 2000). The health disparity in those with ID has been attributed to limited healthcare access, inadequately trained

providers, social determinants of health, and a lack of health education programs (Anderson et al., 2013).

Effective education is crucial for individuals with ID in regard to improving health outcomes because no medication exists to treat cognitive impairment (Batshaw et al., 2013). Health education can be provided in a variety of settings. A main strategy for accomplishing population-based change is the implementation of community prevention programs (Merzel & D'Afflitti, 2003). Community programs that promote health provide resources and education to those with ID and give healthcare providers experience working with the population (Special Olympics, 2015). Health promotion settings are lacking effective methods for educating individuals with ID; however, many techniques, including kinesthetic learning, observation, and coaching, are used in classroom-based special education programs (Reynolds, Zupanick, & Dombeck, 2013).

Statement of the Problem

Creating effective health promotion programs for those with ID is challenging as the programs need to be accessible to the population and individualized to the unique learning styles of participants (Reynolds et al., 2013). The challenge of meeting the learning needs of individuals with ID through health promotion programs has prevented effective health education for the population (Reynolds et al., 2013). Ineffective education may contribute to the high prevalence of preventable and chronic disease, such as psychological deficiency, sensory impairment, and cardiovascular disease (Draheim, 2006; Reichard, Stolze, & Fox, 2011; Special Olympics, 2015). Programs like Special Olympics aim to provide proper health education to individuals with ID (Special Olympics, 2017b). Although Special Olympics has its own Health Promotion Program,

its Minnesota chapter had experienced the challenge of effectively reaching its audience due to inadequate health curriculum, lack of attendance, and insufficient volunteer training (H. Tyler, personal communication, September 22, 2017).

Needs Assessment

An existing framework for health promotion for those with ID is the Special Olympics Health Promotion Program. Special Olympics is an organization that was started by Eunice Kennedy Shriver in 1968 (Special Olympics, 2015). Today, Special Olympics has more than 4.9 million participants, called athletes, worldwide and is focused on allowing those with ID to "develop physical fitness, demonstrate courage, and experience joy" (Special Olympics, 2015; Special Olympics, 2017b, para. 1). The goal of the organization is to "help people with [ID] discover new strengths to succeed, [and to help athletes] find joy, confidence, and fulfillment on the playing field and in life" (Special Olympics, 2017b, para. 2). Special Olympics runs Healthy Athletes, the largest global public health organization for those with ID (Special Olympics, 2017b). One discipline of Healthy Athletes is the Health Promotion Program which aims to prevent the development of health conditions by educating athletes about the health consequences of certain lifestyle choices (Special Olympics, 2015). North American athletes had a significantly higher body mass index (BMI) than athletes in other countries, and Special Olympics uses the Health Promotion Program in an attempt to reverse the pattern (Lloyd, Temple, & Foley, 2012). Special Olympics Minnesota's Health Promotion Program had been identified as having the lowest attendance of all Minnesota Healthy Athletes programming (H. Tyler, personal communication, September 22, 2017). The low numbers of participants were attributed to a lack of program appeal and activities that fit

the educational needs of the athletes (H. Tyler, personal communication, September 22, 2017).

Purpose

Based on a needs assessment with SOMN, the purpose of the community service project was to enhance the effectiveness of Special Olympics Minnesota's Health Promotion Program through improved curriculum, program organization, and clinical volunteer education. Literature shows those with ID require that their individual learning styles (visual, auditory, kinesthetic, etc.) and educational needs, such as repetition or time, be met in their learning (Bradley, Danielson, & Daniel, 2002; Lynne, 2016). Despite current research in special education, educational variety in the Health Promotion Program materials was still lacking (H. Tyler, personal communication, September 22, 2017). Improved curriculum and material presentation was determined a necessary chance to enable SOMN athletes to better comprehend why and how to make healthy living choices (H. Tyler, personal communication, September 22, 2017).

Education is considered the most effective approach to equip individuals with ID with practical knowledge and skills (Batshaw et al., 2013). However, research-based special education techniques had yet to be applied to SOMN Health Promotion Program programming (H. Tyler, personal communication, September 22, 2017). The project team, composed of four Bethel University physician assistant students, used their time and understanding of health promotion and special education topics to create a variety of learning opportunities for athletes and to teach clinical volunteers the program material and suggested teaching methods. By doing so, the project team hoped to bridge the gap

between what was presented, understood, and personally applied by athletes who participated in the Health Promotion Program.

Significance of the Problem

Literature shows a significantly higher incidence of chronic and preventable health issues in those with ID (Batshaw et al., 2013). However, the preventable health problems have not been effectively addressed through provider and caretaker intervention (Osborn et al., 2012). Thus, education should be utilized to reverse chronic and preventable disease rates among those with ID. The desired result of reversing preventable disease for those with ID is improving both the quality and duration of life. The project team hoped to see that utilization of evidence-based educational methods in the Health Promotion Program increased participant understanding of health topics and invoked in participants a desire to take practical steps to improving their health.

Definitions

The terms intellectual disability, Special Olympics, Healthy Athletes, and the Health Promotion Program were defined as the following for the community outreach project. An intellectual disability (ID) is a disorder beginning in the developmental stage of life and includes both intellectual and adaptive functioning deficiencies (APA, 2013). The three criteria for an ID diagnosis include: 1) intellectual functioning (reasoning and abstract thinking) that is two standard deviations below intelligence test means, 2) deficiency in adaptive functioning to clinically-evaluated conceptual (memory, language, reading, etc.), social (empathy, interpersonal communication, friendship abilities, etc.), and practical domains (personal care, money management, self-management of behaviors, etc.), and 3) deficiency onset during the developmental period of life (APA,

2013). Intellectual disability is comparable to the International Classification of Disease term intellectual developmental disability (IDD) and the previous Diagnostic and Statistical Manual of Mental Disorders (DSM) classification of mental retardation (American Association on Intellectual and Developmental Disabilities [AAIDD], 2010; APA, 2000). Intellectual disabilities encompass the "cognitive" portion of the broader categories of neurodevelopmental disorders or developmental disabilities (DD) (AAIDD, 2010; American Psychological Association, 2016). Due to the comprehensiveness of the ID definition, it has a wide prevalence, many causative factors, and associated impairments.

Special Olympics is recognized as the largest international organization for individuals with ID (Special Olympics, 2017b). Each country and state within the United States has its own chapter which offers events and services for participants, whom Special Olympics calls athletes (Special Olympics, 2017b). Specifically, Special Olympics offers individuals with disabilities opportunities to participate in athletic training and competitive individual and team sports at annual sporting events such as bowling, swimming, or flag football (Special Olympics, 2017b).

In addition to sports, Special Olympics offers programming called Healthy Athletes, which provides health services and education to athletes (Special Olympics, 2015). Through Healthy Athletes, more than 1.7 million free health examinations are provided annually for individuals with ID (Special Olympics, 2015). These health examinations are offered in seven different disciplines: Fit Feet, FUNfitness, Health Promotion, Healthy Hearing, Medfast, Opening Eyes, and Special Smiles (Special Olympics, 2015). The community outreach project addressed the Health Promotion

Program (Special Olympics, 2015). The Health Promotion Program focuses on preventive health including healthy eating, physical fitness, and lifestyle choices (Special Olympics, 2015). Additionally, Special Olympics Minnesota's Health Promotion Program screening includes measurement of blood pressure, height, weight, and BMI and teaches athletes about making positive nutrition, physical activity, tobacco, sun safety, and hydration choices (Special Olympics, 2015).

Conclusion

Overall, individuals with ID have a great need for increased preventive care (Batshaw et al, 2013). The increased need for preventive care was recognized by Special Olympics and addressed by its Health Promotion Program (Special Olympics, 2015). Special Olympics Minnesota Health Promotion Program organizers recognized the program had the potential to cause a greater impact but needed individuals who were able to implement curriculum, organizational, and educational changes (H. Tyler, personal communication, September 22, 2017). The project team worked in tandem with SOMN to enhance the Health Promotion Program and its efficiency for its targeted population. Very little evidence-based literature exists on effective ways to educate those with ID in a health promotion setting. However, research was conducted on health disparity between the general population and those with ID, education approaches for ID individuals, and methods by which Special Olympics addresses health issues. Literature is discussed comprehensively in the following chapter.

Chapter 2: Literature Review

Introduction

Many researchers have explored the wellbeing of those with ID. Literature review focuses on the health status and health education of those with ID and discusses Special Olympics as it relates to both. The literature review concentrates on those with the diagnosis of ID, excluding those with developmental and learning disabilities, despite the colloquial interchangeability of the terms. Despite the extensive research on the health status of those with intellectual disabilities, few studies examine the impact of differing educational styles on the reception of health promotion education for those with ID, most likely due to the difficulty in studying the diverse cohort. The themes emerging from the literature include present health disparities existing within the population, the power of education to reduce health disparity, and the unique position of Special Olympics to address health and health education concerns.

Intellectual Disability

Prevalence.

In the United States, over 6.5 million people, almost 2% of the country's population, have an ID (Special Olympics, 2017b). Although ID is seen in all races and cultures, males and those from low-income countries have a higher prevalence of ID diagnosis (APA, 2013; Special Olympics, 2014). Intellectual disability is not always identified in the early years of life and is most commonly diagnosed between 10-14 years of age (Batshaw et al., 2013). In families who have one child with ID, there is a 3-8% chance of having a second child with ID (De Souza, Halliday, Chan, Bower, & Morris, 2009; Van Naarden Braun, Autry, & Boyle, 2005).

Classification.

Due to the prevalence of those with ID, many organizations and associations have classified ID diagnoses into subgroups by degree of intellectual impairment, required support, domain of disability, and etiology (Batshaw et al., 2013). The American Psychiatric Association (2000) classifies those with ID by their IQ score. The American Association on Intellectual and Developmental Disability (AAIDD) also uses degree of severity for classification but categorizes disability by the amount of support an individual with ID needs (Batshaw et al., 2013). The National Center of Rehabilitation Research uses five domains to categorize those with an ID: pathophysiology, impairment, functional limitation, disability, and societal limitation (Msall, 2005).

Etiology and prognostic factors.

The two main overlapping etiologies of ID include factors related to nature (prenatal genetic or biological factors) and nurture (postnatal social or familial factors) (Batshaw et al., 2013). Genetic etiologies include over 500 disorders and comprise two-thirds of all ID diagnoses (Batshaw et al., 2013). Some specific genetic and biological etiologies include Down syndrome, fragile X syndrome, velocardiofacial syndrome (VCFS), and Klinefelter syndrome (Kodituwakku, 2009). Ten percent of all ID cases are due to an external problem such as substance abuse or infections like cytomegalovirus during the first and second trimester of pregnancy (Batshaw et al., 2013; Centers for Disease Control and Prevention [CDC], 2015b). Hypoxia and neonatal encephalopathy may also contribute to ID (APA, 2013).

Signs and associated features.

The heterogeneity of ID etiologies leads to a variety of associated features and impairments. In general, the more severe the intellectual disability, the more associated impairments are observed (Batshaw et al., 2013). Initial childhood signs of ID often include delayed motor function, delayed speech, trouble understanding social rules, and difficulty solving problems (CDC, 2015b). Other associated features include impaired risk assessment, low motivation in school, and difficulty forming interpersonal relationships, all of which may predispose an individual to be viewed as aggressive or disruptive (American Psychological Association, 2016). These features often leave those with ID vulnerable to fraud, physical abuse, sexual abuse, and higher risk of suicide (American Psychological Association, 2016).

According to the American Psychological Association (2016), each ID can progress very differently based on the severity and etiology of the disorder. With severe brain dysfunction, ID signs can often be observed before the age of two, while milder dysfunction may manifest in later years (American Psychological Association, 2016). Additionally, ID diagnoses are dynamic in nature, having the ability to progress, stabilize, adapt, or improve with time such that an ID diagnosis is no longer appropriate (American Psychological Association, 2016).

In addition, mental, physical, and neurodevelopmental comorbidities are three times more likely in those with ID (American Psychological Association, 2016). It has been estimated that 20% of those with severe ID have cerebral palsy and 20% develop seizure disorders (Batshaw et al., 2013). Furthermore, many have sensory impairments,

nutrition and gastrointestinal disorders, chronic diseases, lack of physical activity, and psychiatric disorders (American Psychological Association, 2016).

Current Health Status of those with Intellectual Disability

The overall health status of those with ID is greatly dependent on intellectual and adaptive skills (Bittles et al., 2002; Patja et al., 2000). According to a study conducted in Australia, the life expectancy in those with mild ID was found to be equivalent to that of the general population (74.0 years) (Bittles et al., 2002; Patija et al., 2000). However, there is greater than 20% decrease in life expectancy (58.6 years) for an individual with severe ID (Bittles et al., 2002; Patija et al., 2000). Life expectancy was also lower in males and those having a specific genetic disorder such as Down Syndrome, cytogenetic defects, Fragile X, tuberous sclerosis, and Prader Willi syndrome (Bittles et al., 2002). Despite a decreased life expectancy, a nation-wide study in Finland found that those with ID are now living longer than in the past (Patija et al., 2000). One study associated the increase in longevity to ID treatment shifting from institutionalization toward home and community living (Ptomey & Wittenbrook, 2015). Life expectancy is negatively determined by co-existing conditions like epilepsy and hearing impairment (Patija et al., 2000). The lower health status in those with ID also has an economic impact for these individuals and their families. In the United States, those with ID make up 15% of total enrollment in Medicaid, but account for a disproportionate 41% of Medicaid's expenses (Herz, 2012).

In addition, those with ID often have visual, hearing, and gustatory impairments (Batshaw et al., 2013). Nearly twice as many individuals with ID have hearing problems in comparison to the general population and over 25% of individuals with ID fail hearing

tests (Special Olympics, 2015). Likewise, it has been estimated that those with ID are 20% more likely to become visually impaired and 16% have an eye disease (O'Brien & Middleton, 2009; Special Olympics, 2015). Individuals with ID are also twice as likely to be missing teeth, which may affect eating habits and food preferences (Special Olympics, 2015).

Ninety-seven percent of those diagnosed with ID or DD have at least one eating problem (Gal, Hardal-Nasser, & Engel-Yeger, 2011). Eating issues in individuals with ID have been associated with sensory issues such as dislike for certain textures, specificity of food presentation, physical feeding difficulties, pathogenic vomiting, and mealtime behaviors (Goldschmidt & Song, 2017). Those with ID may also suffer from gastrointestinal disorders like constipation (Ibrahim, Voigt, Katusic, Weaver, & Barbaresi, 2009). A study analyzing nutritional deficiency in those with ID found a population-wide lack of calcium and protein intake (Sharp et al., 2013).

Along with gastrointestinal disorders, those with ID have higher rates of chronic diseases such as diabetes mellitus, cardiovascular disease, low bone density, and hypertension (Draheim, 2006; Reichard, Stolze, & Fox, 2011; Special Olympics, 2015). Seventy-three percent of those with ID have been categorized as obese, as compared to 69% obesity among the general population (Special Olympics, 2015). According to Ptomey and Wittenbrock (2015), the leading factor of greater obesity rates in those with ID is lack of physical activity. Less than 30% of ID individuals participate in regular physical activity, especially walking, sports, and jogging (Lin et al., 2010). However, 64% of Special Olympics athletes report exercising three or more times a week; only 20% of the general population makes the same claim (Special Olympics, 2014).

In addition to physical ailments, emotional and behavioral problems are a "significant extra dimension that burdens the lives of many children with ID" (Bouras & Holt, 2007, p. 181). Children and adolescents with ID are three times more likely than the general population to have a psychiatric disorder such as anxiety, depression, schizophrenia, or attention deficit hyperactivity disorder (ADHD) (Batshaw et al., 2013; Bouras & Holt, 2007). Nevertheless, psychiatric disorders often are more difficult to diagnose in individuals with ID, especially if the individual lacks the ability to talk about what they are experiencing or participate in screening (Bouras & Holt, 2007). Psychiatric disorders are important to monitor in those with ID because suicide rates are higher among these individuals, and psychiatric disorders can be just as detrimental as physical morbidities (American Psychological Association, 2016).

Reasons for Health Disparities in those with Intellectual Disability

The reason for decreased physical, emotional, and behavioral health among those with ID is multifactorial and includes limited access to health care, inadequately trained providers, social determinants of health, and lack of health prevention programs for those with ID (Anderson et al., 2013). According to Special Olympics (2015), there are 200 million people with ID worldwide, most with decreased access to health care services. Many individuals with ID and their family members have difficulty finding a provider who has experience working with patients who have ID (Ward, Nicholas, & Freedman, 2010). In a cohort study conducted in the United Kingdom, preventive care screenings for cervical, breast, prostate, and colon cancer were significantly fewer in those with ID (Osborn et al., 2012). Another study found that even though patients with ID went to see a general practitioner as many times as control patients, patients with ID received fewer

preventive measures like blood pressure measurements and cervical cytology tests (Whitfield, Langton, & Russell, 1996). Thus, fewer preventive screenings are directed toward those with ID, resulting in an even greater disparity (Emerson & Hatton, 2007).

In addition to disparities in health care systems, those with ID are often affected by social determinants of health including socioeconomic and environmental factors. A study conducted in Australia concluded that children living in poverty were at a five times greater risk of ID compared to those in the top 10% economical bracket (Phillips, Miranti, Vidyattama, & Cassells, 2013). Poverty is also associated with ID because the environment of those with a lower income has more risk factors; for example, exposure to secondhand smoke is both more likely in low income areas and is a risk factor for ID development (Batshaw et al., 2013). Additionally, medical bills and support often cost more for those with ID, which drives some families into poverty (Emerson & Hatton, 2007). Thus, poverty and ID may have a reciprocal relationship.

Current Health Initiatives for those with Intellectual Disability

Despite the lack of health prevention programs for those with ID, there are many other programs and organizations supporting those with ID. In 2009, the Centers for Disease Control and Prevention (CDC) and the National Center on Birth Defects and Developmental Disabilities met to discuss the current health status for those with ID. They proposed greater health participation, health promotion, and health care for individuals with ID (CDC, 2009). Since then, many organizations have studied health interventions aiming to improve the wellbeing of individuals with ID. For example, the Academy of Nutrition and Dietetics published its position on nutrition services for individuals with ID and DD in 2015 (Ptomey & Wittenbrock, 2015). Some additional

assistance for those with ID includes home health aides, domestic help, local groups, day centers, and supported independent living (O'Brien & Middleton, 2009).

The most effective treatment options for those with ID are multifaceted and include education, social interaction, behavioral therapy, treatment of comorbid conditions, and family counseling (Batshaw et al., 2013). There is no medication to treat cognitive impairment, but associated symptoms like ADHD, anxiety, and depression can be treated (Batshaw et al., 2013). Due to the lack of cognitive medicinal treatment, education is the "single most important discipline" involved in addressing the challenges those with ID face, especially in regard to healthcare (Batshaw et al., 2013, p. 301).

Health Promotion

A large portion of health education is health promotion. Health promotion is the implementation of social interventions to enable individuals to control and improve their health (World Health Organization, 2017). By increasing an individual's belief in their ability to make positive health choices and providing them with educational tools, health promotion programs initiate health-related change by utilizing social interaction between educators and their intended audience (Bandura, 2004). These programs are generally targeted to those with lower education, financial status, and exposure to personal health issues, but they are not limited to these audiences. Health promotion must not only provide knowledge to its participants, but it must also increase the confidence individuals have in regard to making change in their lives (CDC, 2015a). Thus, success of health promotion programs is measured by more than numbers of individuals educated; instead, the success of health promotion relies upon individual comprehension of educational materials and personal motivation to apply the material to daily living (Lynne, 2016).

Health Promotion and Intellectual Disabilities

The high incidence of poor nutrition and preventable health conditions among those with ID suggests there is a need for health promotion programs which are tailored to the unique learning and needs of individuals with ID (Draheim, 2016; Reichard et al., 2011; Special Olympics, 2015). The great challenge in addressing the disconnect between what is offered and what is needed is in understanding how to best approach health topics within a community that learns and applies information differently than the general public (Special Olympics, 2015). While the health problems faced by individuals with ID may be similar to those of the public, both the educational needs and personal preferences of ID individuals are quite different (Prasher & Janicki, 2008; Special Olympics, 2015). In addition, Reynolds, Zupanick, and Dombeck (2013) note that effective health promotion programs must meet the challenge of reaching large numbers of people while remaining easily accessible and convenient to participants. Consequently, considerations which must be taken when educating those with ID are greatly variable and dependent upon individual need (Reynolds et al., 2013). The variability among those with ID would suggest individual attention and health education is necessary. While individual attention may be necessary, rates of preventable health problems for individuals with ID are so prevalent that individuals with ID should be equipped by health promotion initiatives in as large a number as possible (Naaldenberg, Kuijken, Dooren, & Schrojenstein Lantman de Valk, 2013). Thus, health education should be provided using the most effective strategies possible.

Education and Intellectual Disabilities

Effective education relies on individual understanding of the material which is presented. However, learning styles and needs vary from person to person, and the same is true for individuals with ID (Think Organise Do, 2017). Not only do individuals with ID generally have a lower rate of material comprehension, but the educational needs they have are rarely consistent among the community at large or even amongst a single disability diagnosis (Learning Disabilities Association of America [LDAA], 2013; Lynne, 2016). Education is often difficult for individuals with ID as they face the challenges of overcoming outsider bias against their ability to comprehend information and receiving the non-standardized support they need in learning (Lynne, 2016). Failure of health promotion programs for those with ID can be attributed to both a difficulty overcoming the bias of those constructing curriculum and a lack of individualized learning support (Lynne, 2016). Historically, bias and standardization has been an obstacle for special education in the United States (Turnbull, Turnbull, & Wehmeyer, 2007).

History of intellectual disability education.

Prior to 1975, students with ID were often excluded from public schools or misdiagnosed (Turnbull, Turnbull, & Wehmeyer, 2007). As a result, disability advocacy groups claimed that constitutional equal education rights were being violated (Turnbull, Turnbull, Stowe, & Wilcox, 2000; Yell, 1998). In 1975, Congress enacted the Individuals with Disabilities Education Act (IDEA) (Education for All Handicapped Children Act of 1975). The IDEA allowed students with ID to be enrolled in public schools, evaluated appropriately for an ID, and receive education tailored to their

individual needs through an Individualized Education Plan (IEP) (Education for All Handicapped Children Act of 1975).

Another mandate by IDEA allowed individuals with ID to be educated in a general classroom with the help of supplementary aids and services (Education for All Handicapped Children Act of 1975). For example, the Universal Design for Learning is an architectural concept which aids in the design of accessible and comprehensible instructional materials for individuals with ID (Orkwis & McLane, 1998). Other supplementary aids and services mandated by IDEA include building access, classroom modifications, assistive technology devices, modifications to time or task requirements, and activity support from another person (Turnbull et al., 2007). The effects of IDEA have developed into what is now more widely known as special education.

Teaching strategies for intellectual disability.

Persons with ID are heterogenous when it comes to learning styles and educational needs (National Dissemination Center for Children with Disabilities [NDCCD], 2013). Thus, effective special education requires individualized learning and teaching (NDCCD, 2013). Students focus best on material and activities they are interested in, so the student's own interests and strengths should be incorporated into instructional strategies or materials (Turnbull et al., 2007).

One common special education strategy for new concepts is breaking down learning tasks into small steps (Center for Parent Information & Resources [CPIR], 2018). Step-wise approaches may be applied to more complex concepts or activities by further breaking down larger tasks into specific component parts (CPIR, 2018; Turnbull et al., 2007). Once a step is mastered, the student is introduced to the next step (CPIR,

2018; Turnbull et al., 2007). The step approach is similar to many learning methodologies for general education but may have more and smaller steps for individuals with ID (CPIR, 2018).

A second special education strategy is accommodating multiple learning styles in the classroom (CPIR, 2018). Students with ID are shown to learn best with visual aids like charts, graphs, pictures, and media formatting (Turnbull et al., 2007). Kinesthetic learning, which may include performances or projects, is often incorporated in special education as well (Reynolds et al., 2013).

Additionally, students with ID benefit from immediate feedback on their performance (CPIR, 2018). Immediate feedback allows students to make connections between their behavior and an instructor's response (CPIR, 2018). When there is a delay in feedback to a student with ID, it may lead to a missed learning opportunity for the student to make a correlation between cause and effect (CPIR, 2018).

Students with ID also need general accommodations to maximize their learning (CPIR, 2018). General accommodations for students with ID may include providing extra time to complete tasks, facilitating small group learning, providing printed notes, breaking instruction into smaller parts, and allowing the student to respond either orally or electronically (CPIR, 2018). Instructors may also use short and simple sentences, avoid using jargon or technical words, ask one question at a time, repeat instructions frequently, ask the student if they need further explanation, minimize distractions and transitions, and emphasize the student's success (Turnbull et al., 2007).

Health education and intellectual disability.

Education on intellectual disability and alternative teaching methods have yet to be applied adequately to the medical field. Healthcare providers learn how to communicate with patients while in school and on rotations, but very few healthcare students have learned to communicate with someone with ID (Holder, Waldman, & Hood, 2009). As a result, the medical community has made little impact for ID individuals in terms of patient education and preventive care (Osborn et al., 2012). By foregoing direct patient education in favor of educating family members or using pharmaceutical intervention, healthcare professionals have failed to provide patients who have ID with a personal sense of responsibility for their wellbeing and confidence in their capability to make healthy choices (Szymanski & King, 1999). The patient education deficit has bled over into health promotion, as healthcare professionals are creating and operating the programs with little awareness of how to promote understanding within their audience (Holder et al., 2009). As a result, the level of education and depth of information received by individuals with ID is standardized throughout health promotion programs. Standardization remains an ineffective way of reaching large numbers of participants as individual learning style differs and comprehension ability may be lower or higher than the offered curriculum (Bradley et al., 2002).

Health promotion often generalizes learning approaches for individuals with ID to one style of learning rather than recognizing the wide variety of learning needs present (LDAA, 2013). For example, a program may teach attendees about using sunscreen by displaying pictures, but this approach is only helpful to those who are visual learners; others may learn very little from the experience if the information is not presented to

them with a more practical or mixed approach (Special Olympics, 2015). Standardization of learning materials is often used while educating the general public, but it is generally ineffective for individuals with ID as they often require additional explanations, time, or approaches to a certain topic before they can understand it (Bradley et al., 2002; Lynne, 2016).

Modified teaching approaches are used widely in special education programs around the country for individuals with ID. The programs have shown that utilizing kinesthetic learning, observation, and coaching can increase information retention and understanding in those with ID; this is not always true of the general population nor are these differing approaches always utilized in health promotion (Reynolds et al., 2013). Despite the current efforts being made in understanding how to best teach those with ID, many health promotion efforts have failed to utilize current research to equip and teach their targeted individuals (H. Tyler, personal communication, September 22, 2017).

Nevertheless, some initiative has been taken in regard to promoting healthy living amongst individuals with ID. Many of these initiatives have taken a three-tiered approach in health promotion for those with ID by introducing educational, behavioral, and social change (Doody & Doody, 2012). In one program, nutritionists and educators taught a class individuals with ID how to use basic cooking skills and their preferred foods to create healthy alternatives in the kitchen (Goldschmidt & Song, 2017). Likewise, the CDC funds an eight-week “Steps to Your Health” program which emphasizes nutrition, exercise, and stress reduction for those with ID (CDC, 2010). Both initiatives resulted in more positive health choices made by participants, but they were limited in the number of people they reached and not easily accessible to many because

they were performed over the course of several weeks (CDC, 2010; Goldschmidt & Song, 2017). Limited reach and accessibility are consistent amongst many efforts to increase health awareness in those with ID. However, as the National Institute of Health (NIH) budget has increased in recent years, the number and size of organizations becoming involved in health promotion is also expected to rise, showing promise for more widespread health change amongst those with ID (National Institutes of Health [NIH], 2017).

Special Olympics

One substantial and international organization dedicated to the wellbeing and education of those with ID is Special Olympics. The mission of Special Olympics (2017b) is,

> to provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities. This gives the athletes continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills, and friendship with their families, other Special Olympics athletes, and the community. (para. 1)

Establishment of Special Olympics.

Special Olympics, according to its historical archives, largely owes its conception and success to the sustained efforts and enthusiasm of Eunice Kennedy Shriver (Special Olympics, 2017b). Born in 1921, Eunice grew up as the fifth of nine children in what one day would become one of the most prominent families in American politics (Special Olympics, 2017b). Through athletics, Eunice was able to bond with her siblings,

especially her older sister, Rosemary, who was born with an ID (Special Olympics, 2017b). Rosemary was kept out of the public view and her condition remained a family secret while Eunice was growing up (Special Olympics, 2017b). Through the mid-20th century, individuals with ID were misunderstood, feared, and shamed by the public (Special Olympics, 2017b). Programming tailored to individuals with ID was nonexistent and most with ID were institutionalized in facilities which discouraged activity and contact with the public (Cheeseman, 2015). Angered by the neglect and stigma Rosemary faced, Eunice made it her life's work to advocate for individuals with ID (Special Olympics, 2017b). According to the Joseph P. Kennedy, Jr. Foundation (2016), Eunice became the foundation's chairman in 1957 after completing her degree at Stanford University. She utilized the foundation to fund research exploring the causes of ID and health programs for individuals with ID (The Joseph P. Kennedy, Jr. Foundation, 2016).

In 1960, Eunice's brother John F. Kennedy (JFK), was elected president of the United States (Special Olympics, 2017b). At Eunice's insistence, intellectual disabilities became a focus of JFK's administration. After a short time in office, JFK appointed Eunice to the President's Panel on Mental Retardation along with other scientists and lawmakers (Special Olympics, 2017b). The panel was tasked with examining the issues faced by individuals with ID and submitting recommendations for solutions (Special Olympics, 2017b). The panel's final report concluded "general ignorance, prejudice, and superstition" of individuals with ID led to the disenfranchisement of those with ID and that legislation should be passed to reduce the marginalization of the population (Bazelon & Boggs, 1963, p. 41).

After touring numerous institutions during her time with the President's Panel on Mental Retardation, Eunice became appalled at the lack of physical activity performed by facility residents, according to Special Olympics archives (2017b). When she questioned institution doctors about the lack of activity, the doctors replied that those with ID were not capable of physical activity and did not have the intellectual ability to understand the rules required of organized sports (Special Olympics, 2017b). In an effort to prove experts wrong, Eunice started hosting a summer day camp, which became known as "Camp Shriver," in her backyard in Rockville, Maryland (Special Olympics, 2017b). Here, she taught 100 campers with ID how to swim and play field hockey (Special Olympics, 2017b). By 1966, Eunice had camps across the United States with over 7,000 campers (Special Olympics, 2017b). Then, Eunice began to envision an international athletic event in which athletes with ID could compete against one another (Special Olympics, 2017b). Her vision was fulfilled in 1968 at Soldier Field in Chicago where the first International Special Olympics Summer Games were held (Special Olympics, 2017b). Hours before the start of the games, Eunice drafted an athlete's oath that is still in use today: "Let me win, but if I cannot win, let me be brave in the attempt" (Special Olympics, 2017b, para. 3). Later that year, Special Olympics was officially founded with Eunice as the head of the organization (Special Olympics, 2017b).

Special Olympics today.

Since its foundation in 1968, Special Olympics (2017b) reports to have expanded to 172 countries with more than 4.9 million athletes worldwide. Any individual diagnosed with ID or a cognitive delay and is at least 2 years old is welcome to participate in Special Olympics programming as an athlete (Special Olympics, 2017b).

The organization now has local, state, national, and international divisions helping those with ID discover their skills and abilities (Special Olympics, 2017b). Special Olympics also creates opportunities for community members to work alongside individuals with ID; over one million people have volunteered with Special Olympics as coaches and event staffers (Special Olympics, 2017b).

Healthy Athletes.

Given the size of Special Olympics, it has become the largest global public health organization which is run specifically for individuals with ID (Special Olympics, 2017b). Over the years, Special Olympics (2015) has claimed to lead the field in implementing progressive health programming aimed at the needs of individuals with ID. Aware of the medically-underserved status of most of its athletes, Special Olympics developed the Healthy Athletes Program in 1997 in an effort to provide free health screenings and education (Special Olympics, 2017b). The program provides an inclusive, non-threatening environment and trains healthcare providers to adequately and empathetically serve those with ID in practice (Special Olympics, 2017b). Since its implementation, Healthy Athletes has annually provided over 1.4 million athletes with health screening in seven disciplines: Fit Feet, Funfitness, Health Promotion, Healthy Hearing, Medfast, Opening Eyes, and Special Smiles (Special Olympics, 2017b). Healthy Athletes is largely volunteer-based, relying on the service of health professionals and students to direct, organize, and conduct programming at state-level games (Special Olympics, 2017b). The information gleaned from athlete health screening is incorporated into the Healthy Athletes Software (HAS) database, currently the largest database for health

information concerning those with ID, in order to best examine the health needs facing Special Olympics athletes (Special Olympics, 2015).

Special Olympics Health Promotion Program.

The Health Promotion branch of Healthy Athletes aims to prevent disease by educating athletes about the health consequences of certain lifestyle choices (Special Olympics, 2015). The Health Promotion Program screen examines BMI, blood pressure, and nutritional intake in athletes while using interactive encouragement to help individuals engage in healthy behaviors such as drinking water, eating well, washing hands, and being active (Special Olympics, 2015). Since 2008, over 80,000 Health Promotion Program screenings have been conducted in 32 countries, which has allowed many countries to identify health concerns in athletes (Special Olympics, 2014). A third of adolescent athletes and 60% of adult athletes who participated in the Health Promotion Program screenings were overweight or obese (Lloyd et al., 2012). Additionally, North American athletes had significantly higher BMIs in comparison to athletes from other continents (Lloyd et al., 2012). Over a quarter of athletes also had low bone density and nearly 40% reported being regularly exposed to secondhand smoke (Special Olympics, 2014). Due to the prevalence of health conditions and risks in the Special Olympics population, it is important that athletes receive targeted education and annual screenings to track individual athletes over time (H. Tyler, personal communication, September 22, 2017).

Despite the value of the Health Promotion Program, Hillary Tyler, Health Programs Manager of Special Olympics Minnesota, stated that the Health Promotion Program was often overlooked by athletes, families, and coaches at state and national-

level games. In Minnesota, it was estimated that only a quarter of participating athletes attend the Health Promotion Program while at state-level games (H. Tyler, personal communication, September 22, 2017). Additionally, Minnesota's Health Promotion Program had been the lowest attended Healthy Athletes discipline (H. Tyler, personal communication, September 22, 2017). While it was uncertain why the Health Promotion Program was not widely attended in Minnesota, it had been hypothesized that the curriculum lacked appeal and activities fitting the educational needs of athletes (H. Tyler, personal communication, September 22, 2017). Minnesota Health Promotion Program organizers also acknowledged a disparity between the education participants received and the practical knowledge they walked away with (H. Tyler, personal communication, September 22, 2017).

Conclusion

A higher incidence of disease among those with ID is greater than the general population, which may be attributed to different styles of learning and applying health-related information. Programs like the Special Olympics Health Promotion Program aim to provide suitable health education to individuals with ID; however, Minnesota's Health Promotion Program was lacking in community outreach and effectiveness for individual participants. By examining relevant literature on individuals with ID and their learning styles, implementing new and varying education techniques into the Health Promotion Program curriculum, and providing more thorough training for volunteers, the Health Promotion Program was hypothesized to have greater potential to improve the current health status of attending athletes. In the next chapter, a methodological approach to Health Promotion Program improvement is presented.

Chapter 3: Methodology

Introduction

The purpose of the community service project was to enhance the effectiveness of the SOMN Health Promotion Program through improved curriculum, program organization, and clinical volunteer education. Chapter three is an outline of the educational and organizational changes implemented in the SOMN Health Promotion Program. Project rationale and needs assessment, location and population, project plan and implementation, ethical conduct, potential barriers, and project tools are addressed. Specific program changes highlighted in chapter three include volunteer training, check-in, vital measurements, physical activity, nutrition and beverages, hand washing, tobacco avoidance, sun safety, hydration, and follow-up and goal-setting. All curriculum materials are included in figures and appendices.

Project Rationale and Needs Assessment

Individuals with ID have more chronic and preventable diseases as compared to the general public (Batshaw et al., 2013). Special Olympics Minnesota has a unique presence within the ID community that is used to address many common health-related issues through the Healthy Athletes Program (Special Olympics, 2017b). Health Promotion, one of the seven Healthy Athletes programs, aims to help athletes of Special Olympics make positive health-related changes in their lives through screening for height, weight, bone density, and blood pressure (Special Olympics, 2015). The Health Promotion Program education is also focused on nutrition, exercise, handwashing, sun safety, smoking avoidance, and hydration (Special Olympics, 2015). Despite the Health Promotion Program's presence at SOMN gaming events, SOMN had noticed that the

programming had a lack of appeal and efficacy among participants (H. Tyler, personal communication, September 22, 2017). In addition, SOMN had noted decreased attendance and limited volunteer training prior to the beginning of Health Promotion Program events (H. Tyler, personal communication, September 22, 2017). The Health Promotion Program organizers had limited time to make curriculum and organizational changes to the Health Promotion Program due to having full-time positions outside of Special Olympics (H. Tyler, personal communication, September 22, 2017). However, the organizers anticipated making curriculum and organizational changes to the Health Promotion Program would increase its efficacy and appeal to athletes (H. Tyler, personal communication, September 22, 2017). Thus, the community service project focused on implementing positive changes throughout the SOMN Health Promotion Program.

Education was identified as an intervention that should be implemented to address the higher incidence of chronic and preventable diseases amongst individuals with ID (Batshaw et al., 2013, p. 301). However, health promotion for individuals with ID has traditionally been limited by a lack of individualized curriculum and limited educator understanding of individuals with ID (Lynne, 2016). Special Olympics, an international sporting organization for ID individuals established in 1968, faces the same challenges of tailoring curriculum to individual needs and educating volunteers about ID (Special Olympics, 2017b). The state divisions of Special Olympics also host a variety of health-related programming, including the Health Promotion Program. While the SOMN Health Promotion Program provides health-related education to individuals with ID, its organizers reported that the program's efficacy is limited (H. Tyler, personal communication, September 22, 2017). Specifically, inadequate health curriculum, low

program attendance, and insufficient volunteer training was identified as obstacles to providing a more efficacious experience for participating athletes (H. Tyler, personal communication, September 22, 2017).

Location and Population

The Health Promotion Program in Minnesota occurs biannually during SOMN events. The location and layout of the program is modified based on the location of the SOMN games. Historically, the Health Promotion Program has been held in classrooms, hallways, and outdoor tents. Due to variations of environment and space, all Health Promotion Programs vary in flow, education stations, and materials used. All materials for Health Promotion were determined by SOMN and purchased using the organization's funding and outside grants or donations.

Participants of Health Promotion are limited to those who Special Olympics calls athletes. A SOMN athlete meets the following criteria: (1) having an ID, as determined by a medical diagnosis or having an Individualized Education Plan (IEP) from school, (2) being at least two years old, and (3) participating in a SOMN sporting event such as basketball, swimming, or softball (Special Olympics, 2017b). Athletes are not limited by gender or specific ID diagnosis. Health Promotion is an optional activity for athletes. Thus, Health Promotion Program participation excludes individuals who are not SOMN athletes or have no desire to participate in the programming.

Project Plan and Implementation

The community service project plan was to enhance the SOMN Health Promotion Program in an effort to provide greater preventive care to SOMN athletes and an opportunity for current and future healthcare providers to work with individuals with ID.

Initially, the project team assessed the program's former organization, curriculum, and volunteer training before proposing specific changes to the Health Promotion Program organizers. The project team implemented the approved changes in the SOMN Summer Games 2018. Following the summer games, feedback from the Health Promotion Program organizers and volunteers allowed further modifications to be made for subsequent games. The community service project plan outlines former characteristics of the Healthy Promotion Program, the initial planning phase, and proposed changes.

Former characteristics.

The following section outlines the former SOMN Health Promotion Program, as reported by SOMN volunteer and project team member Laura Hayes.

> Special Olympics Minnesota's Health Promotion Program has traditionally been staffed by healthcare students, healthcare professionals, and community volunteers. The volunteers were recruited on the SOMN website or through word-of-mouth and received 15-30 minutes of training before the Health Promotion Program started. The Health Promotion Program made few accommodations for athletes that were non-verbal or illiterate. In addition, many athletes chose to leave the Health Promotion Programs before finishing all of the stations.
>
> Formerly, an athlete was checked-in at an entrance table where they received a HAS form labeled with a unique identification number. The athlete proceeded to the height and weight station where volunteers facilitated measurements using portable scales with stadiometers. Bone density was also measured using heel scanning tools. The athlete's results were recorded on the

HAS form. Next, the athlete's blood pressure was measured manually by a clinical volunteer. Per Special Olympics guidelines, if the athlete's blood pressure was over 160/100, the athlete would not be allowed to participate in any Special Olympics games (Special Olympics, 2015). Next, a volunteer for the nutrition station worked individually with the athlete and asked questions about the athlete's typical diet. A binder containing photos of foods was used as a visual aid for nutrition volunteers to assess the athlete's intake of calcium, fruits, vegetables, sugar-sweetened beverages, fast foods, and snacks. The volunteers for the nutrition station did not receive any prior nutrition training and were not trained to assist those with alternative diets such as lactose intolerance or a gluten allergy. The nutrition volunteer would then informally educate the athlete on diet modifications that could be made and give them a pamphlet labeling "good" and "bad" foods. At the physical activity station, mats would be set out on the floor and the athlete would roll a large foam dice. Based on the number rolled, the athlete would perform that number of jumping jacks, sit-ups, or push-ups. Next, the athlete would walk past tri-fold boards displaying information on sun safety and tobacco cessation with minimal volunteer interaction. Afterward, the athlete would meet with a volunteer who would complete the information on the HAS form by asking the athlete questions about hand washing habits, sun safety, and tobacco use. Finally, a volunteer would collect the HAS form and give the athlete a "healthy" prize such as sunscreen, a water bottle, or a MyPlate model (United States Department of Agriculture [USDA], 2018). (L. Hayes, personal communication, 2018)

Initial planning phase.

Due to past volunteering, the project team was familiar with SOMN, ID, and the Health Promotion Program. Initially, the project team met with SOMN Health Promotion Program organizers to discuss the health-related needs of SOMN. Special Olympics Minnesota cited that less than a quarter of its athletes attend the Health Promotion Program at each gaming event (H. Tyler, personal communication, September 22, 2017). In addition, the Health Promotion Program curriculum did not meet the learning needs of athletes, due to a lack of volunteers to run the program, volunteer training, and educational materials that met the learning needs of the population (H. Tyler, personal communication, September 22, 2017). The project team identified that their strengths, knowledge, and research could help SOMN meet some of their goals regarding the Health Promotion Program and agreed to partner with SOMN (see Appendix A: Special Olympics Minnesota Project Approval) (H. Tyler, personal communication, September 22, 2017).

After performing a literature review and studying SOMN's current Health Promotion Program, the project team generated ideas for enhancing the Health Promotion Program. The ideas to be implemented were selected by the Health Promotion Program organizers and the project team on the basis of perceived impact on the population's health, the financial resources of SOMN, and the simplicity in replicating the ideas in future years without the assistance of the project team. All materials, sponsorship, and marketing were facilitated through SOMN.

Project plan.

In the following section, the project plan for enhancing the SOMN Health Promotion Program is described. The majority of these changes were expected to be implemented, but variability occurred based on outside factors. Location, size of SOMN games, and number of volunteers were several factors that were anticipated to change how the Health Promotion Program was organized. The following paragraphs outline volunteer training and the experience of a single athlete as s/he progresses through the updated Health Promotion Program.

Volunteer training.

After signing up on the SOMN website for the Health Promotion Program, volunteers were instructed to arrive 30 minutes before the program began so they could walk through and learn more about the stations. The volunteers were assigned to staff a station based on their previous healthcare knowledge and abilities. At each station, laminated copies of volunteer instructions were available for volunteer training and reference. The Health Promotion Program organizers and the project team visited all volunteers to ensure questions and concerns were addressed. Once the volunteers were trained, the Health Promotion Program began, and athletes were checked-in. Volunteers in the first shift aided in training volunteers in the second shift regarding assigned stations.

Check-In.

An athlete initially approached a check-in table that was clearly marked with a hanging banner provided by SOMN. Here, the athlete stated his/her name to one of the volunteers supporting the station. Volunteers found the athlete's name on a preprinted

sheet of adhesive labels and placed the label on top of a HAS form. The labels contained all necessary identification information required by the HAS form, including name, birth date, and unique HAS identification number. The athlete was verbally or physically guided to the vital measurement station with his/her HAS form.

Vital measurement.

The athlete was greeted by the volunteers supporting the vital measurement station. The goal of the station was to measure the athlete's blood pressure, height, and weight as athlete data for the HAS database. Volunteers working at the vital measurement station were students of healthcare programs or practicing providers who were trained to measure blood pressure. The volunteers performed their station duties in accordance to the volunteer instructions (see Appendix B: Volunteer Instruction for the Vital Measurement Station). A volunteer measured the athlete's blood pressure, height, and weight and record his/her data on the HAS form. Next, the athlete was verbally or physically guided to the physical activity station. The HAS form was carried with the athlete to the next station.

Physical activity.

The athlete was greeted by volunteers supporting the physical activity station. The goal of the station was to encourage the athlete to remain active outside of sports practice and provide him/her with exercises that could be performed individually. The volunteers performed their station duties in accordance to station directions provided in the volunteer instructions (see Appendix C: Volunteer Instructions for the Physical Activity Station). Volunteers guided the athlete through an adapted yoga flow on a folding chair. While performing yoga, the volunteers educated the athlete about the

importance of balance, strength, and flexibility and let the athletes know that s/he can perform the yoga alone or with friends and family. After performing yoga, the athlete was personally guided to the nutrition station by an available nutrition station volunteer.

Nutrition and beverages.

The athlete was greeted by a nutrition volunteer who had retrieved the athlete's HAS form from the athlete. The goal of the nutrition station was to assess the athlete's food intake and provide learning activities about fruit and vegetable intake and sugar-sweetened beverages. The volunteer performed his/her station duties in accordance to station directions provided in the volunteer instructions (see Appendix D: Volunteer Instruction for the Nutrition Station). The station began with the athlete receiving a shopping bag and approaching a "shopping" table with the volunteer. The shopping table displayed food models, fast food containers, beverages, empty packages of perishable food, and packages of non-perishable foods. The volunteer instructed the athlete to identify 2-3 foods s/he ate per meal for breakfast, lunch, and dinner and select one beverage s/he drinks. The athlete placed the foods and beverage in his/her shopping bag and sat down with the volunteer at another table where the nutrition section of the HAS form was completed. On the table where the athlete and volunteer were seated, there was a nutrition binder containing photos of foods and a United States Department of Agriculture (USDA) MyPlate (USDA, 2018).

Fruit and vegetable assessment.

The volunteer began by taking the fruits and vegetables from the athlete's shopping bag and placing them on a USDA MyPlate according to food section. The MyPlate is divided into 4 sections: grains, protein, fruits, and vegetables, with calcium

located next to the plate (USDA, 2018). If the athlete filled half of their plate with fruits and vegetables, the volunteer assumed that the athlete was meeting the recommendation of five fruits or vegetables per day (USDA, 2018). The volunteer reminded him/her to continue to fill half of his/her plate with fruits and vegetables at every meal. If the athlete did not select enough fruit and vegetable models to fill the section of the MyPlate, the volunteer brought out a nutrition binder containing photos of various fruits and vegetables and asked the athlete if s/he saw other fruits and vegetables s/he ate. Additional selections were added to the count of daily fruit and vegetable intake recorded on the HAS form. If the athlete did not identify other fruits and vegetables, the volunteer asked the athlete if there were any fruits and vegetables s/he was willing to try. Assuming the athlete identified one or more additional fruits and vegetables, the volunteer indicated those items on a paper visual of the MyPlate and gave the paper visual to the athlete (USDA, 2018). The volunteer suggested the athlete hang the MyPlate visual on his/her refrigerator as a reminder of the athlete's commitment to try a new fruit or vegetable. The volunteer also explained that the athlete should fill half of his/her plate with fruits or vegetables at every meal to meet the dietary recommendations (USDA, 2018). This activity concluded the fruits and vegetables section on the HAS form and the first learning activity at the nutrition station.

Fast food, snack, and calcium consumption.

The volunteer assessed how often the athlete consumed fast foods, snacks, and calcium by noting any fast food, snacks, or calcium food items in the athlete's shopping bag. Additionally, the volunteer used the nutrition binder to ask the athlete if there were any photos of fast food, snack, or calcium items s/he ate besides what was selected during

the shopping activity. Finally, the volunteer asked how often the athlete consumed fast food, snacks, and calcium foods. The HAS form was filled out using the athlete's selections. Responses were for data collection only and were not used as a learning activity.

Sugar-sweetened beverages.

The volunteer attempted to assess how often the athlete consumed sugar-sweetened beverages by noting any sugar-sweetened beverages in the athlete's shopping bag and by showing the athlete photos of sugar-sweetened beverages in the nutrition binder. Then, the volunteer asked how often the athlete drank sugar-sweetened beverages. The HAS form was filled out using these assessment tools. In addition to assessing consumption of sugar-sweetened beverages, a learning activity was done at the station. The volunteer and athlete went to a display of sugar-sweetened beverages which demonstrated how much sugar is in various types of sugar-sweetened beverages (see Appendix E: Sugar-Sweetened Beverages Display). The volunteer explained that consuming sugar-sweetened beverages daily can lead to weight gain and that daily consumption is discouraged. The volunteer provided alternatives to drinking sugar-sweetened beverages and gave the athlete a reusable Special Olympics water bottle. The volunteer gave the athlete an education sheet about sugar-sweetened beverages, which could be shared with caregivers to help reinforce sugar-free beverage selections (see Appendix F: Sugar-Sweetened Beverages Education Sheet). The athlete was verbally or physically guided to the hand washing station with his/her HAS form.

Hand washing.

The athlete was greeted by the volunteer supporting the hand washing station. The goal of the station was to educate the athlete about the importance of hand washing and to demonstrate proper hand washing technique. The volunteer performed his/her station duties in accordance to station directions provided in the volunteer instructions (see Appendix G: Volunteer Instructions for the Hand Washing Station). The volunteer took the athlete's HAS form, asked the screening questions corresponding to hand washing, and recorded the athlete's answers. The volunteer then shined an ultraviolet (UV) light on various items, such as a basketball, water bottle, or keys, that had been previously touched with fluorescent lotion. The lotion illuminated under UV light and allowed the volunteer to explain where germs can be found and how they can be passed from one place to the next without being noticed. Next, the volunteer placed a small amount of hand sanitizer in his/her hands and offered some to the athlete before leading a demonstration of proper hand washing technique. The athlete mimicked the volunteer's hand movements. Upon station completion, the athlete was verbally or physically guided to the tobacco avoidance station with his/her HAS form.

Tobacco avoidance.

The athlete was greeted by the volunteer supporting the tobacco avoidance station. The goal of the station was to educate the athlete about the negative consequences of tobacco use and provide him/her with tobacco avoidance techniques. The volunteer performed his/her station duties in accordance to station directions provided in the volunteer instructions (see Appendix H: Volunteer Instructions for the Tobacco Avoidance Station). The volunteer took the athlete's HAS form, asked the

screening questions corresponding to tobacco use, and recorded the athlete's answers. Then, the volunteer gave the athlete a large diameter straw and a small diameter straw and instructed the athlete to breathe through both separately. The volunteer explained that the smaller straw should be more difficult to breathe through and that chronic smoking can cause someone to feel like they are always breathing through the smaller straw. The volunteer directed the athlete's attention to a display comparing healthy lung tissue to smoke-damaged lung tissue and explained the differences (see Appendix I: Lung Model Display). Lastly, the volunteer educated the athlete on how to avoid second-hand smoke. Upon station completion, the athlete was verbally or physically guided to the sun safety station with his/her HAS form.

Sun safety.

The athlete was greeted by the volunteer supporting the sun safety station. The goal of the station was to educate the athlete about protection from the sun and help the athlete identify situations when sun protection is needed. The volunteer performed his/her station duties in accordance to station directions provided in the volunteer instructions (see Appendix J: Volunteer Instruction for the Sun Safety Station). The volunteer took the athlete's HAS form, asked the screening questions corresponding to sun safety, and recorded the athlete's answers. Then, the volunteer performed a demonstration by placing various sun barriers, such as a hat, sunglasses, and sunscreen, on his/her body while discussing the harmful effects of sun rays. The athlete was given a solar bracelet that changed colors when exposed to UV radiation and taught to put on sun barriers when s/he sees the band change color. Upon station completion, the athlete was verbally or physically guided to the hydration station with his/her HAS form.

Hydration.

The athlete was greeted by the volunteer supporting the hydration station. The goal of the station was to educate the athlete about signs of dehydration and provide strategies to drink more water. The volunteer performed his/her station duties in accordance to station directions provided in the volunteer instructions (see Appendix K: Volunteer Instructions for the Hydration Station). The volunteer took the athlete's HAS form, asked the screening questions corresponding to hydration, and recorded the athlete's answers. The volunteer educated the athlete on how to identify dehydration by urine color using a urine color display. The display had clear bottles filled with fluid ranging from clear to brown which represented a hydration status range. Subsequently, the volunteer promoted creating more "exciting" and flavorful water by adding cut-up fruit or add-in flavoring. The athlete was given a water bottle by the volunteer. Upon station completion, the athlete was verbally or physically guided to the follow-up and goal-setting station with his/her HAS form.

Follow-up and goal-setting.

The athlete was greeted by volunteers supporting the follow-up and goal-setting station. The goal of the station was to ensure that the athlete's entire HAS form was completed, to highlight concerns for a primary care provider, and to provide the athlete with a health goal reminder. Volunteers at the station were students of healthcare programs or practicing providers and performed their station duties in accordance to station directions provided in the volunteer instructions (see Appendix L: Volunteer Instructions for the Follow-Up and Goal-Setting Station). After assessing completion of the HAS form, the volunteer verbalized concerning findings from the health screen, filled

out a form describing the health concern, instructed the athlete to give the form to his/her caregiver, and encouraged the athlete to talk to his/her primary care provider (Special Olympics, 2015).

Next, the athlete and volunteer developed a health goal for the athlete and wrote the goal on a whiteboard. The athlete was guided into a photo booth area where a fun photo was taken with his/her written goal. The athlete was thanked for his/her participation in the screening and verbally or physically guided out of the Health Promotion Program screening area. This marked completion of the Health Promotion Program for the athlete.

Theme creation.

In an effort to create the feeling of novelty, two themes were separately applied to the Health Promotion Program. The first theme, "Catch the Wellness Wave," was used during the SOMN Summer Games. Volunteers wore tropical attire, such as sunglasses and hats, the station signage was tropical-themed, and the goals station photo booth included tropical props. Similarly, the second theme, "Super Health Heroes," was used during the SOMN Fall Games. Décor was based on primary colors, and the goals station photo booth included props such as capes, boxing gloves, and comic book style "pow" bubble signs. These themes may be utilized at the Health Promotion Program for several years and added new appeal to the program.

Ethical Conduct

The project team aimed to provide SOMN with well-researched information and ideas to enhance the Health Promotion Program. Thus, evidence-based health prevention information was shared with the athletes. The preventive information shared by the

program volunteers was generalized and not specific to the athlete's medical history. The project team acted with respect when working with SOMN organizers and athletes. The project team upheld the SOMN pre-established "Volunteer Code of Conduct" and "Sportsmanship and Code of Conduct for All" as established by Special Olympics International (Special Olympics, 2012). The same ethical conduct guidelines were built into volunteer training.

Potential Barriers

Enhancing the Health Promotion Program curriculum to accommodate various learning styles was expected to generate an increased depth of understanding and employment of healthy ideals in participants. Additionally, increased clinical volunteer education and exposure to individuals with ID were expected to result in positive health outcomes. However, the community service project was limited by how success was measured and the nature of health screenings. The number of athletes that attended the updated screening can be compared to prior years to estimate program attractiveness, and collective cohorts of athletes may be tracked annually (H. Tyler, personal communication, October 27, 2017). However, objective measurement of the personal impact and application of health promotion topics for individual athletes was not possible due to the limitations of health screening and Special Olympics data systems. Thus, individual attendance of the Health Promotion Program, follow-up with providers, and personal implementation of healthy practices cannot be documented due to lack of Special Olympics resource capability (H. Tyler, personal communication, October 27, 2017).

Additionally, health screenings themselves are limited as they rely on two key components: the honesty of those participating in the health screening and the competency of those administering the health screening. Socially-desirable response bias is a threat to the overall validity and meaningfulness of self-report-based health screenings because participants tend to respond to questions in ways that avoid criticism and gain approval (King & Brunner, 2000). Therefore, athletes may answer questions a certain way to gain praise from those administering the screening or to avoid educational discussions concerning nutrition and healthy habits (H. Tyler, personal communication, September 22, 2017). Furthermore, the overall effectiveness of the screening may be hindered due to volunteer inexperience with ID individuals. The ability of the volunteers to effectively communicate and flexibly cater to encountered learning styles likely impacts athlete understanding, retention of health-related topics, and screening responses.

Project Tools

Preexisting tools.

Due to the established nature of the Health Promotion Program, SOMN had acquired numerous structural and educational materials that were used even as the project team makes changes to the Health Promotion Program. Preexisting tools included tables, chairs, signage, nutrition binders, and SOMN-branded health promotion materials. The project team added educational pamphlets to stations that lacked educational materials. The added materials were publicly available from national health organizations such as the CDC and NIH. Additionally, the tobacco avoidance and sugar-sweetened beverages stations were lacking an educational display. Therefore, the project team created a lung tissue display that compared healthy and diseased lung tissue and a sugar-sweetened

beverages display comparing sugar content in popular drinks (see Appendix E: Sugar-Sweetened Beverages Display; see Appendix I: Lung Model Display).

Volunteer instructions.

Detailed volunteer instructions were written by the project team. Volunteer instructions for each station outlined the goals, materials, station flow, and suggested evidence-based educational script for that station. Additionally, the station instructions specified which section of the HAS form needed to be completed by volunteers at that station. Volunteers were required to read their assigned station instructions prior to the beginning of their volunteer shift. If volunteers had questions during the event, they could refer to the volunteer instructions as needed.

Conclusion

In a needs assessment, SOMN cited a lack of organization, effective curriculum, and volunteer involvement in the Health Promotion Program. The Health Promotion Program organizers anticipated that program enhancement would positively affect participation and athlete understanding of program curriculum. In addition, the organizers also anticipated that a program update would benefit volunteers by giving them exposure to individuals with ID. The project team decided to partner with SOMN and conduct research regarding individuals with ID, nutrition, education, and SOMN in order to address the identified needs of the Health Promotion Program. The Health Promotion Program changes made by the project team aimed to positively impact the target population, respect SOMN's budget, and allow replicability for future years. Organization, curriculum changes, the addition of a goal-setting station, and theme implementation were emphasized in Chapter 3. Chapter 4 uses feedback from the project

team and Health Promotion Program organizers to reflect on the implemented program changes. Further development and sustainability of the Health Promotion Program is also discussed.

Chapter 4: Discussion

Introduction

The community service project aimed to enhance the quantity and quality of preventive health-related topics for the SOMN Health Promotion Program. Building upon the needs assessment with SOMN and literature review, the project team made curriculum, volunteer training, and program organization changes to the Health Promotion Program with the ultimate goal of reducing or reversing preventable and chronic disease development in athletes. Chapter four includes a discussion of the community service project outcomes, limitations of the project, and suggestions for future improvements to the SOMN Health Promotion Program as determined by project team interpretation and feedback from Health Promotion Program organizers.

Summary of Results

Research has shown that a higher incidence of chronic and preventable disease exists in individuals with ID (Batshaw et al., 2013; Draheim, 2006; Richard et al., 2011; Special Olympics, 2015). The cause for higher incidence of disease is multifactorial, but limited access to health care, inadequate provider training, and lack of health promotion programs for individuals with ID have all been identified as attributing factors (Anderson et al., 2013). Education has been named as a crucial intervention in changing the pattern of unhealthy lifestyle choices and poor medical outcomes for individuals with ID (Anderson et al., 2013; Batshaw et al., 2013). One health education intervention for individuals with ID includes community programs, or health promotion programs, which provide resources and education on a variety of health topics (Special Olympics, 2015). Health promotion programs, which are often standardized, face the challenge of being

accessible to participants and meeting the variety of learning needs that are represented by those with ID (Reynolds et al., 2013). Special Olympics is one organization that aims to bridge the gap between health education and individual comprehension of health material for individuals with ID (Special Olympics, 2017b).

Today, Special Olympics is a worldwide sports-based organization reaching over 4.9 million participants with ID, called athletes (Special Olympics, 2015). Within the structure of Special Olympics exists the largest global public health organization for those with ID known as Healthy Athletes (Special Olympics, 2015). Healthy Athletes aims to provide health education with the goal of preventing health conditions, such as obesity, which are often seen in Special Olympics athletes (Lloyd, Temple, & Foley, 2012; Special Olympics, 2015). However, each state's Special Olympics may run Healthy Athletes differently. A needs assessment with the Special Olympics Minnesota chapter showed difficulty in effectively attracting and reaching its audience through the Health Promotion Program due to inadequate health curriculum, insufficient volunteer training, and limited program organization (H. Tyler, personal communication, September 22, 2017). Through the needs assessment with SOMN and literature review, the project team aimed to improve the effectiveness of the SOMN Health Promotion Program with the goal of providing greater preventive care to athletes.

All changes to be implemented by the project team were selected and approved by the Health Promotion Program organizers with the expectation of improving program impact, respecting the financial assets of SOMN, providing current and future healthcare providers exposure to individuals with ID, and sustaining the program changes for future years. Changes made by the project team were aimed at improving curriculum for

existing Health Promotion Program stations, volunteer education, and program organization. Stations which received curriculum change included physical activity, nutrition and beverages, hand washing, tobacco avoidance, sun safety, hydration, and goal-setting. Volunteer education changes included provision of physical instructions for stations and verbal instruction from Health Promotion Program organizers and the project team. Finally, changes to program organization focused on provision of station materials, reorganization of stations for improved flow, increased volunteer numbers, and addition of a theme to each event. The changes made to the Health Promotion Program by the project team were implemented first in the SOMN Summer Games 2018 and again in the SOMN Fall Games 2018.

The health data collected from HAS forms at the SOMN Summer and Fall Games 2018 supports the literature which shows those with ID have a high incidence of chronic and preventable disease (Table 1). For example, according to the National Center for Health Statistics in 2016, 69.5% of the general population over 20 years of age are overweight or obese compared to 72.4% of the Health Promotion participating athletes in the SOMN Summer and Fall Games 2018 (K. Sparks, personal communication, December 12, 2018; National Center for Health Statistics, 2016). As seen in Table 1, the percent of adult Special Olympics athletes who were obese during the SOMN Summer and Fall Games 2018 was 72.4%, which was comparable to 73.1% of North American Special Olympics athletes (K. Sparks, personal communication, December 12, 2018; Special Olympics, 2017a). Conversely, the use of tobacco products in SOMN athletes was 4.7% at the SOMN Summer and Fall Games 2018, which was lower than 6.8% of Special Olympics athletes in North America (Special Olympics, 2017a; K. Sparks,

personal communication, December 12, 2018). The data is congruent with literature regarding the health of individuals with ID.

Table 1

SOMN Summer and Fall Games 2018 Health Promotion Screening Data Compared to National and Global Screening Data

	Percent of Special Olympic Athletes		
Health Variable	Global*	North America*	2018 Summer and Fall SOMN Games
Adult athletes overweight or obese	59.6%	73.1%	72.4%
Youth (less than 20 years of age) overweight or obese	31.4%	49.2%	46.7%
Use Tobacco Products	8.6%	6.8%	4.7%

**Note.* Data obtained from Special Olympics (2017a).

Curriculum improvements.

Overall, the project team believed the changes made to the Health Promotion Program were positive. One goal the project team had for the community service project was to improve the curriculum of the SOMN programming. Previously, the Health Promotion Program curriculum was standardized for all participants, which research has shown is an ineffective way of educating a population of individuals with ID (Batshaw et al., 2013). Literature review showed that individuals with ID often have lower material comprehension, but they also have vastly different educational needs from many of their peers with ID (LDAA, 2013; Lynne, 2016). Current literature and special education techniques support the use of supplemental aids and implementations such as activity support, step-wise learning approaches, multiple learning styles in classrooms (visual, auditory, kinesthetic, etc.), and immediate performance feedback (CPIR, 2018; Reynolds

et al., 2013). While non-standardization for each aspect of the Health Promotion Program was ideal, health promotion programs often require some standardization due to time constraints, low volunteer understanding of educational materials, and limited volunteer exposure to individuals with ID (Reynolds et al., 2013). Thus, the project team emphasized the importance of utilizing step-wise approaches and accommodating multiple learning styles per Health Promotion Program learning activity. For example, where the smoking cessation station previously included a text-only flyer, the project team implemented changes that allowed auditory learning through volunteer teaching, visual learning through a lung display model, and kinesthetic learning through a breathing activity with a straw.

The program director, Hillary Tyler, stated the project team made positive improvements to the Health Promotion Program curriculum.

> The improvements [the project team] made really improved the look and feel of the [Health Promotion Program], which in turn positively impacted the experience the athletes attending the [program] had. The updates to the activities and displays made [the Health Promotion Program] a more interactive and fun learning experience for all involved. (H. Tyler, personal communication, December 17, 2018)

Additionally, the project team felt curriculum changes made during the community service project were positive, as the content was adaptable to different cognitive levels and learning styles, but the project team has recognized and discussed the limitations of their curriculum intervention in the following section.

Volunteer training improvements.

Another goal the project team had for the community service project was the improvement of volunteer training and preparedness. Previously, Health Promotion Program volunteers received only verbal instruction for activities they would complete throughout the program. Research has shown that health promotion programs for individuals with ID are often restricted by the limited understanding that educators have about individuals with ID and their complex learning needs (Lynne, 2016). To improve volunteer training for the Health Promotion Program, the project team elected to provide written instructions for volunteers regarding how to operate each program station. Volunteer instructions included materials needed for each station, basic pointers for interacting with individuals with ID, and an outlined script for station education (see Appendix B; Appendix C; Appendix D; Appendix G; Appendix H; Appendix I; Appendix J; & Appendix K). In addition, the project team and Health Promotion Program organizers provided verbal instruction to all volunteers regarding assigned stations and were a resource to volunteers throughout the events as questions or concerns arose. The project team felt the written and verbal volunteer instruction changes made during the community service project were positive, as the project team observed volunteers who were able to operate assigned stations with few questions. The project team has recognized and discussed the limitations of their volunteer education intervention in the following section.

Program organization improvements.

The final goal that the project team had was to improve the organization of the SOMN Health Promotion Program. Though the literature review did not focus on the

impact of organization on the effectiveness of health promotion programs, Health Promotion Program organizers cited a need for improved structure within the program (H. Tyler, personal communication, September 22, 2017). Changes made to the Health Promotion Program to improve organization included compiling and printing lists of materials for each station, rearranging program stations to allow for faster flow, improving curriculum organization, implementing a theme for each event, and recruitment of more volunteers from health-based programs in Minnesota.

Program director, Hillary Tyler agreed that organizational changes made to the Health Promotion Program were beneficial by stating "[They were] excellent! Every detail was thought of and covered. [The project team] had everything taken care of" (H. Tyler, personal communication, December 17, 2018).

The project team agreed the changes they made for organization improvement made a positive difference in both operating the Health Promotion Program and the individual experience of each athlete. In addition, statistics collected by SOMN showed that more volunteers were recruited with the impact of the community service project. In 2017, only 29 volunteers were involved in the Health Promotion Program while 112 volunteers were involved in 2018 (K. Sparks, personal communication, December 12, 2018). The project team agreed that the increased numbers of volunteers both improved program experience for athletes and was a positive learning experience for many health care professional and student volunteers. The project team recognized that limitations may have impacted the effectiveness of project organization changes, as will be discussed in a following section.

Data to support program success.

The long-term goal of the community service project, the improvement of health in Special Olympics athletes who attend the Health Promotion Program, is difficult to measure objectively due to lack of data and analysis. However, statistics collected in 2017 and 2018 give some indication of success of previously stated community service project goals. One indirect marker of community service project success is the total number of athletes in attendance at the Health Promotion Program at the 2018 games compared to the 2017 games. In 2017, 551 athletes attended the SOMN Health Promotion Program (K. Sparks, personal communication, December 13, 2018). After the implementation of the community service project, attendance increased 18.9% to 655 athletes in attendance during Summer and Fall 2018 games (K. Sparks, personal communication, December 13, 2018). Another indirect marker of success of the community service project is popularity of the Health Promotion Program in comparison to other Healthy Athletes divisions. Hillary Tyler, program director, had previously stated that the Health Promotion Program was the least attended of the Healthy Athletes disciplines (H. Tyler, personal communication, September 22, 2017). During the SOMN Summer Games 2018, 100 athletes attended Fun Fitness, 182 athletes attended Fit Feet, 311 athletes attended Special Smiles, 455 athletes attended Health Promotion, and 548 athletes attended Healthy Hearing (K. Sparks, personal communication, December 12, 2018). From the data provided, it appears the Health Promotion Program is now the second most attended event when in the past it was the least attended event (H. Tyler, personal communication, September 22, 2017). Thus, the community service project enhancements may have increased the attendance of the Health Promotion Program.

Limitations

Special Olympics Minnesota Health Promotion Program organizers voiced satisfaction with the modifications the project team made to the Health Promotion Program for the community service project. When asked about limitations of the community service project, program director, Hillary Tyler, could not identify areas which were limited or could use future improvement (H. Tyler, personal communication, December 17, 2018). However, the project team recognized that their modifications were limited.

Curriculum limitations.

In making curriculum improvements, the intention was to forego the previous approach of presenting the materials in a passive manner or only accommodating a single learning style. The project team intended to reflect the literature to better meet the learning styles of those with ID by accommodating for multiple learning styles including visual, auditory, and kinesthetic. While the curriculum and display changes which were made accounted for multiple learning styles at each station, the changes could not account for all learning styles of athletes. For example, Turnbull and colleagues (2007) suggested that individuals with ID often need a quiet space or repetition in their learning, but the Health Promotion Program had little opportunity for using quiet spaces or repetition. In addition, the project team recognized that their interpretation of special education techniques was limited, and consultation with special education professionals may have been beneficial in developing new curriculum.

Volunteer training limitations.

A second goal of the community service project was to improve training of the Health Promotion Program volunteers with the goal of increasing volunteer understanding of both individuals with ID and the materials which were at each program station. The goal of improved volunteer training was addressed with provision of both oral and written instructions for volunteers. Volunteers were educated in two shifts during the day at a Health Promotion Program event. At each event, the first shift of volunteers was able to be receptive to oral and written instructions because the event had not yet begun, and the environment was quiet. The receptivity of first-shift volunteers to instructions suggested that the new instruction methods were effective. However, the second shift of volunteers showed some difficulty in receiving instruction as the event was already in progress, less time was available for training, and the environment was more chaotic. In addition, the project team recognized that having training before arriving to the event may have been beneficial for volunteers.

Program organization limitations.

Lastly, the project team hoped to improve the organization of the Health Promotion Program to allow for maximal effectiveness and flow during the event. In general, the project team and Health Promotion Program organizers recognized that changes did improve the operations of the program from both a volunteer and athlete perspective. However, limitations to organization were identified in space and number of volunteers. The spaces provided to the Health Promotion Program differed at summer and fall event locations. Varied event spaces required rearrangement of program flow, limited the number of education stations which could be used, and was often confusing

for athletes to navigate. Though the number of volunteers did increase due to project team recruitment efforts, the number of volunteers was often insufficient for larger groups or teams of athletes who would attend the Health Promotion Program together.

Future Projects

The goals established for the community service project had been met and resulted in positive outcomes for the SOMN Health Promotion Program. However, the project team determined that several improvements could be made in order to most effectively educate athletes and increase the sustainability of the Health Promotion Program.

Future program curriculum.

In regard to future program curriculum, the Health Promotion Program would benefit from collaboration with a dedicated special education professional who could maximize the program's incorporation of current evidence-based learning techniques. Additionally, special education research should continue to be a priority for curriculum updates to the Health Promotion Program curriculum.

Future volunteer training.

In addition to program curriculum, another benefit to the community service project would be improved training of Health Promotion Program volunteers. Additional volunteer training may include an introductory video created by SOMN or future project teams. The video would briefly explain the purpose of the Heath Promotion Program, provide an overview of the event, and give brief step-by-step station instructions to volunteers. Ideally, an instruction video would be sent by means of electronic mail to volunteers prior to the Health Promotion Program event to allow all volunteers to have a

better understanding of event logistics and responsibilities. A training video may alleviate the confusion experienced by second-shift volunteers who received abbreviated instructions while the event was already in progress.

Future program organization.

The project team also sought to create a sustainable Health Promotion Program that would be able to effectively run in the absence of the project team. While the project team was able to purchase the necessary materials and design an effective flow for the event, the project team recognized the Health Promotion Program will not be sustainable without a consistent source of volunteers. In the past, the Health Promotion Program was not able to effectively recruit adequate numbers of volunteers for the number of athletes that would attend the event. The project team strongly suggests that the Bethel University Physician Assistant Program remain dedicated to the staffing of Health Promotion events. The Bethel University Physician Assistant Program is uniquely qualified to volunteer for the event as it provides a pool of volunteers, and its volunteers are equipped with medical knowledge as well as the volunteers would benefit from increased exposure to individuals with ID in a health education setting. Additionally, other local health programs should be recruited for additional volunteers.

Other future changes.

The project team desires that future project teams or SOMN works to supply athletes attending the Health Promotion Program with additional resources. One resource would be a referral sheet for area medical providers that athletes could visit. Referral sheets would be given to athletes with concerning findings, such as elevated blood pressure, at the wrap-up station and would include the names, phone numbers, addresses,

and type of insurances accepted by providers who are located near an individual athlete's home. Referral forms should include information for free or subsidized clinics for athletes who are without health insurance. The referral sheets would be another way to help athletes receive the care they need in order to remain healthy and active participants with SOMN.

Additionally, many of the activities implemented in the SOMN Health Promotion Program community service project have the ability to be applied to different populations. During the course of the community service project, the nutrition and beverages shopping activity was shared with Special Olympics International (SOI) and representatives from Special Olympics Indiana. Station activities implemented during the community service project may also be used for different age groups, such as elementary school kids, or for health promotion programs for the general population.

Conclusion

Current literature shows the rates of chronic and preventable diseases are significantly higher in individuals with ID compared to the general population (Batshaw, 2013). Health disparity in those with ID has been attributed to limited healthcare access, inadequately trained providers, social determinates of health, and lack of health education programs (Anderson et al., 2013). Special Olympics is the largest global public health organization specifically for individuals with ID (Special Olympics, 2015). To correct the health disparity in those with ID, the project team worked directly with the SOMN organizers to identify the needs SOMN has in their Healthy Athletes programming. During the needs assessment, the Health Promotion Program was identified as the least attended of Healthy Athletes programs due to the need for more interactive curriculum,

volunteer training, and overall program organization (H. Tyler, personal communication, September 22, 2017). After conducting a literature review and studying the SOMN Health Promotion Program, the project team presented ideas to the Health Promotion Program organizers which were selected based on their impact on the population's health, program expense, and feasibility of replication for future years. The project team then created resources and interactive health education stations and implemented them during SOMN Summer and Fall Games 2018. The community service project was evaluated based on project team input, data collected during SOMN Summer and Fall Games 2018, and feedback from Health Promotion Program organizers. While the community service project cannot measure direct health outcomes objectively, continuation of the program may allow quantitative measurement of health outcomes in attending athletes in the future.

Through the community service project, the project team concluded that health promotion programming may not be an ideal method of providing health-related education for all individuals with ID. Health promotion programming, while able to reach large numbers of attendees, is not ideal for many individuals with ID due to lack of individualized education, repetitive learning, and sensory-friendly environments. Due to the multitude of factors contributing to poor health in those with ID, the solution needs to be multifactorial and be implemented into an individual's work, home, and social environments (Batshaw et al., 2013).

Despite a difficulty in reaching all participants who attend health promotion programs, the research team recognizes the use of health promotion programming for individuals with ID to address health disparity through education. In addition, the project

team realized that many providers, including themselves, lack exposure to individuals with ID during their medical training. Health promotion programming may allow future and current providers an experience to improve their practice by engaging in health-related conversations with individuals who have ID. Though the community service project has made improvements to the SOMN Health Promotion Program, additional enhancements should be made to the program to positively impact the health of attending athletes. The project team hopes that the SOMN Health Promotion Program will continue to be further developed in future years by SOMN, the Bethel University Physician Assistant Program, and Health Promotion Program volunteers.

REFERENCES

American Association on Intellectual and Developmental Disabilities [AAIDD]. (2010). *Frequently asked questions on intellectual disability.* Retrieved from https://aaidd.org

American Psychiatric Association [APA]. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Arlington, VA: American Psychiatric Publishing.

American Psychiatric Association [APA]. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

American Psychological Association. (2016). *Defining intellectual disability: Finally, we all agree…almost: Defining and determining intellectual disability.* Retrieved from https://apa.org

Anderson, L. L., Humphries, K., McDermott, S., Marks, B., Sisirak, J., & Larson, S. (2013). The state of the science of health and wellness for adults with intellectual and developmental disabilities. *Intellectual and Developmental Disabilities*, *51*(5), 385-398. doi: 10.1352/1934-9556-51-51.5.385

Bandura, A. (2004). Health promotion by social cognitive means. *Health Education & Behavior, 31*(2), 143-164. doi: 10.1177/1090198104263660

Batshaw, M. L., Roizen, N. J., & Lotrecchiano, G. R. (2013). *Children with disabilities* (7th ed.). Baltimore, Maryland: Paul H. Brookes Publishing Co.

Bazelon, D. L. & Boggs, E. M. (1963). *The president's panel on mental retardation: Report of the task force on law.* Retrieved from https://mn.gov

Bittles, A. H., Petterson, B. A., Sullivan, S. G., Hussain, R., Glasson, E. J., & Montgomery, P. D. (2002). The influence of intellectual disability on life expectancy. *Journals of Gerontology, 57*(7), 470-472. Retrieved from https://www.ncbi.nlm.nih.gov

Bouras, N., & Holt, G. (2007). *Psychiatric and behavioral disorders in intellectual and developmental disabilities* (2nd ed.). Cambridge, England: Cambridge University Press.

Bradley, R., Danielson, L., & Daniel, P. H. (2002). *Identification of learning disabilities: research to practice.* United Kingdom: Routledge.

Centers for Disease Control and Prevention [CDC)]. (2009). *U.S. surveillance of health of people with intellectual disabilities.* Retrieved from http://www.cdc.gov

Centers for Disease Control and Prevention [CDC]. (2010). *CDC promoting the health of people with disabilities.* Retrieved from https://www.cdc.gov

Centers for Disease Control and Prevention [CDC]. (2015a). *Characteristics of an effective health education curriculum.* Retrieved from http://cdc.gov

Centers for Disease Control and Prevention [CDC]. (2015b). *Facts about developmental disabilities.* Retrieved from http://www.cdc.gov

Center for Parent Information & Resources [CPIR]. (2018). *CPIR Resource Library.* Retrieved from https://www.parentcenterhub.org

Cheeseman, N. A. (2015). Understanding the history of institutionalization: Making Connections to de-institutionalization and the Olmstead Act for persons with intellectual disabilities in the state of Illinois (Doctoral dissertation, National Louis University). Retrieved from https://digitalcommons.nl.edu

De Souza, E., Halliday, J., Chan, A., Bower, C., & Morris, J. (2009). Recurrence risks for trisomies 13, 18, and 21. *American Journal of Medical Genetics, 149A*(12), 2716-2722. doi: 10.1002/ajmg.a.33099

Doody, C. M., & Doody, O. (2012). Health promotion for people with intellectual disability and obesity. *British Journal of Nursing, 21*(8), 460-465. doi: 10.12968/bjon.2012.21.8.460

Draheim, C. C. (2006). Cardiovascular disease prevalence and risk factors of persons with mental retardation. *Mental Retardation and Developmental Disabilities Research Reviews, 12*(1), 3-12. doi: 10.1002/mrdd.20095

Education for All Handicapped Children Act of 1975, Pub. L. 94-142, 89 Stat. 773, codified as amended at 20 U.S.C. §§1401.

Emerson, E., & Hatton, C. (2007). Poverty, socio-economic position, social capital and the health of children and adolescents with intellectual disabilities in Britain: a replication. *Journal of Intellectual Disability Research, 51*(11), 866-874. doi: 10.1111/j.1365-2788.2007.00951.x

Gal, E., Hardal-Nasser, R., & Engel-Yeger, B. (2011). The relationship between the severity of eating problems and intellectual developmental deficit level. *Research in Developmental Disabilities, 32*(5), 1464-1469. doi: 10.1016/j.ridd.2010.12.003

Goldschmidt, J., & Song, H. J. (2017). Development of cooking skills as nutrition intervention for adults with autism and other developmental disabilities. *Journal of the Academy of Nutrition and Dietetics, 117*(5), 671-679. doi: 10.1016/j.jand.2016.06.368

Herz, E. J. (2102). *Medicaid: A primer.* Congressional Research Service. Retrieved from: http://www.law.umaryland.edu/

Holder, M., Waldman, H. B., & Hood, H. (2009). Preparing health professionals to provide care to individuals with disabilities. *International Journal of Oral Science, 1*(2), 66. doi: 10.4248/ijos.09022.

Ibrahim, S. H., Voigt, R. G., Katusic, S. K., Weaver, A. L., & Barbaresi, W. J. (2009). Incidence of gastrointestinal symptoms in children with autism: A population-based study. *Pediatrics, 124*(2), 680-686. doi: 10.1542/peds.2008-2933

The Joseph P. Kennedy, Jr. Foundation. (2016). *The Joseph P. Kennedy, Jr. Foundation.* Retrieved from: http://www.jpkf.org

King, M. F., & Bruner, G. C. (2000). Social desirability bias: A neglected aspect of validity testing. *Psychology and Marketing*, *17*(2), 79-103. doi: 10.1002/(SICI)1520-6793(200002)17:23.0.CO;2-0

Kodituwakku, P. W. (2009). Neurocognitive profile in children with fetal alcohol spectrum disorders. *Developmental Disabilities Research Reviews, 15*(3), 218-224. doi: 10.1002/ddrr.73

Learning Disabilities Association of America [LDAA]. (2013). *Successful strategies for teaching students with learning disabilities.* Retrieved from https://ldaamerica.org

Lin, J. D., Lin, P. Y., Lin, L. P., Chang, Y. Y., Wu, S. R., & Wu, J. L. (2010). Physical activity and its determinants among adolescents with intellectual disabilities. *Research in Developmental Disabilities, 31*(1), 263-269. doi: 10.1016/j.ridd.2009.09.015

Lloyd, M., Temple, V. A., & Foley, J. T. (2012). International BMI comparison of children and youth with intellectual disabilities participating in Special Olympics. *Research in Developmental Disabilities, 33*(6), 1708-1714. doi: 10.1016/j.ridd.2012.04.014.

Lynne, K. (2016). Higher education and disability: Exploring student experiences. *Cogent Education, 3*(1). doi: 10.1080/2331186X.2016.1256142

Merzel, C. & D'Afflitti, J. (2003). Reconsidering community-based health promotion: promise, performance, and potential. *American Journal of Public Health, 93*(4): 557-574. Retrieved from https://www.ncbi.nlm.nih.gov

Msall, M. E. (2005). Measuring functional skills in preschool children at risk for neurodevelopmental disabilities. *Developmental Disabilities Research Reviews, 11*(3), 263-273. doi: 10.1002/mrdd.20073

Naaldenberg, J., Kuijken, N., Dooren, K., & Schrojenstein Lantman de Valk, H. (2013). Topics, methods and challenges in health promotion for people with intellectual disabilities: A structured review of literature. *Research in Developmental Disabilities, 34*(12): 4534-4545. doi: 10.1016/j.ridd.2013.09.029

National Center for Health Statistics (US). (2016). *Health, United States, 2015: With special feature on racial and ethnic health disparities*. Retrieved from https://www.ncbi.nlm.nih.gov/books

National Dissemination Center for Children with Disabilities. (2013). *Intellectual Disabilities in Your Classroom.* Retrieved from https://theeducatorsroom.com

National Institutes of Health [NIH]. (2017). *Estimates of funding for various research, condition, and disease categories (RCDC).* Retrieved from https://report.nih.gov

O'Brien, G., & Middleton, C. (2009). *Living with ageing in developmental disabilities.* G. O'Brien & L. Rosenbloom (Ed.), Developmental disability and ageing (pp. 90-114). London: Mac Keith Press.

Orkwis, R., & McLane, K. (1998). *A curriculum every student can use: Design principles for student access.* ERIC/OSEP Topical Brief, pp. 3-19.

Osborn, D. P. J., Horsfall, L., Hassiotis, A., Petersen, I., Walters, K., & Nazareth, I. (2012). Access to cancer screening in people with learning disabilities in the UK: Cohort study in the health improvement network, a primary care research database. *Public Library of Science One, 7*(8). doi: 10.1371/journal.pone.0043841

Patja, K., Iivanainen, M., Vesala, H., Oksanen, H., & Ruoppila, I. (2000). Life expectancy of people with intellectual disability: A 35-year follow-up study. *Journal of Intellectual Disability Resources, 44*(5), 591-599. Retrieved from https://www.ncbi.nlm.nih.gov

Phillips, B., Miranti, R., Vidyattama, Y., & Cassells, R. (2013). Poverty, social exclusion and disadvantage in Australia. *National Centre for Social and Economic Modelling.* Retrieved from www.natsem.canberra.edu

Prasher, V., & Janicki, M. (Eds.). (2008). *Physical health of adults with intellectual disabilities.* Oxford, UK: Blackwell Publishing.

Ptomey, L. T., & Wittenbrook, W. (2015). Position of the academy of nutrition and dietetics: Nutrition services for individuals with intellectual and developmental disabilities and special health care needs. *Journal of the Academy of Nutrition and Dietetics, 115*(4), 593-608. doi: 10.1016/j.jand.2015.02.002

Reichard A., Stolzle, H., & Fox, M. H. (2011). Health disparities among adults with physical disabilities or cognitive limitations compared to individuals with no disabilities in the United States. *Disability Health Journal, 4*(2), 59-67. doi: 10.1016/j.dhjo.2010.05.003

Reynolds, T., Zupanick, C. E., & Dombeck, M. (2013). The choice of educational \ settings: The pros and cons of mainstreaming children with intellectual disabilities. *Mental Health.* Retrieved from https://www.metnalhelp.net

Sharp, W. G., Berry, R. C., McCracken, C., Nuhu, N. N., Marvel, E., Saulnier, C. A., … Jaquess, D. L. (2013). Feeding problems and nutrient intake in children with autism spectrum disorders: A meta-analysis and comprehensive review of the literature. *Journal of Autism and Developmental Disorders, 43*(9), 2159-2173. doi: 10.1007/s10803-013-1771-5

Special Olympics. (2012). *Sportsmanship and code of conduct for all.* Retrieved from https://media.specialolympics.org

Special Olympics. (2014). *Special Olympics Healthy Athletes 2014 data report.* Retrieved from http://media.specialolympics.org/resources

Special Olympics. (2015). *Special Olympics Health Promotion: Clinical director manual.* Retrieved from http://media.specialolympics.org/resources

Special Olympics (2017a). Healthy Athletes Exam Results 2007. Retrieved from http://media.specialolympics.org

Special Olympics. (2017b). *Our history.* Retrieved from http://www.specialolympics.org

Szymanski, L., & King, B. H. (1999). Practice parameters for the assessment and treatment of children, adolescents, and adults with mental retardation and comorbid mental disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(12), 5S-31S. doi: 10.1016/j.jaac.2016.08.004

Think Organise Do. (2017). *Learning style and intellectual disability.* Retrieved from https://thinkorganisedo.com

Turnbull, A., Turnbull, R., & Wehmeyer, M. L. (2007). *Exceptional lives: Special education in today's schools.* Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Turnbull, M.R., Turnbull, A.P., Stowe, M., & Wilcox, B.L. (2000). *Free appropriate education: The law and children with disabilities (6th ed.)*. Denver: Love.

United States Department of Agriculture [USDA]. (2018). MyPlate. Retrieved from https://www.choosemyplate.gov

Van Naarden Braun, K., Autry, A., & Boyle, C. (2005). A population-based study of the recurrence of developmental disabilities. *Prenatal and Perinatal Epidemiology, 19*(1), 69-79. doi: 10.1111/j.1365-3016.2004.00597.x

Ward, R. L., Nichols, A. D., & Freedman, R. I. (2010). Uncovering health care inequalities among adults with intellectual and developmental disabilities. *Health & Social Work, 35*(4), 280-290. Retrieved from https://www.ncbi.nlm.nih.gov

Whitfield, M., Langan, J., & Russell, O. (1996). Assessing general practitioners' care of adult patients with learning disability: Case-control study. *Quality in Health Care, 5*(1), 31-35. Retrieved from https://www.ncbi.nlm.nih.gov

World Health Organization [WHO]. (2017). *Health promotion*. Retrieved from www.who.int/en

Yell, M. (1998). *The law and special education*. Upper Saddle River, NJ: Merrill/Prentice Hall.

APPENDIX A

Special Olympics Minnesota Project Approval

Special Olympics Minnesota Project Approval

Avery Bajema, Laura Hayes, Kelsey Spies, and Shelly Winslow have the approval of Special Olympics MN to work alongside our staff and volunteers to make educational and organizational changes to the Health Promotion Program for Special Olympics athletes. The work they do will be approved by the organization before being implemented.

Signed,
Hillary Tyler
Health Programs Manager
Special Olympics Minnesota

APPENDIX B

Volunteer Instructions for the Vital Measurement Station

Volunteer Instructions for the Vital Measurement Station

(Height, weight, and blood pressure [BP])

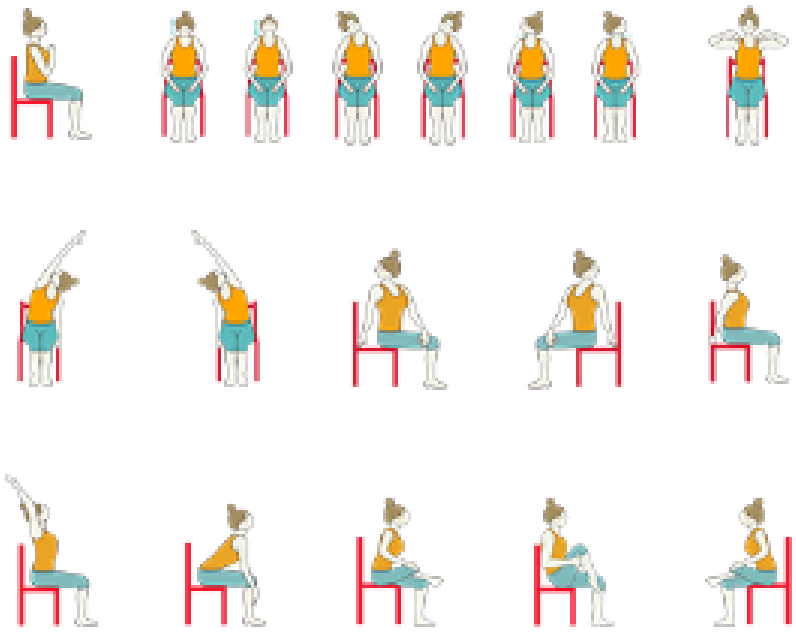
- Materials
  - Scales, stadiometers, BP cuffs, volunteer instructions, pens, table, station sign
- Goal of station
  - To accurately measure the athlete's blood pressure, height, and weight as data for the HAS database
- Step-by-step interaction with athlete
  - General notes
    - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
  - Welcome the athlete
    - Ask for the athlete's name and give your own while pointing to your name tag.
  - Have the athlete sit and remove his/her shoes.
  - Measure blood pressure while the athlete is sitting down.
    - Instruct: *"Sit with your legs uncrossed, don't talk, and stay still while your blood pressure is being taken."*
    - Mark the HAS form accordingly.
    - If the athlete's blood pressure is over 160 systolic and/or over 100 diastolic, the athletes should be instructed to stay at the station. A clinical director must be notified.
  - Bring the athlete to the scales and measure his/her weight and height. Ensure the athletes are standing tall for his/her height measurement, shoes are still removed, and any bulky bags are set down beforehand.
    - Mark the HAS form accordingly.
  - Guide the athlete to the Physical Activity Station. Help him/her find a seat and have him/her put on his/her shoes and participate until a volunteer is ready for him/her at the next station and calls his/her name.
    - If the Physical Activity Station is not the next station, allow the athlete to put his/her shoes on before leaving the Vital Measurement Station.
  - Place the athlete's HAS form in a bin near the Physical Activity Station or send it with him/her.
- Before the athlete leaves the station
  - Fill out corresponding HAS form information (weight, height, and blood pressure)
  - Send the HAS form with the athlete to the next station
  - Provide a giveaway prize (if applicable)

APPENDIX C

Volunteer Instructions for the Physical Activity Station

Volunteer Instructions for the Physical Activity Station

- Materials
  - Folding chairs, volunteer instructions, pens, station sign
- Goal of station
  - To encourage the athlete to remain active outside of sports practice and provide him/her with exercises that can be performed individually
- Step-by-step interaction with athlete
  - General notes
    - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
  - Welcome the athlete
    - Ask for the athlete's name and give your own while pointing to your name tag.
  - Adapted yoga flow activity
    - Athletes will be guided to the station and asked to take a seat. If the athlete is in a wheelchair, they may perform the activity in his/her wheelchair as they are able.
    - This activity will be group-led by one or more volunteers who are walking the athletes at the station through adapted yoga poses such as the example shown below.



    - Explain intermittently: *"You can perform this activity at home every day for 10-15 minutes to help with flexibility, balance, and strength*."

        - Continue the activity with all athletes until they are pulled from the next station volunteers in order of arrival.
    - After activity completion
        - Wait for a nutrition volunteer (or a volunteer from the next station) to pull athletes from the station in the order they arrived.
        - Wish the athlete good luck on his/her upcoming events during the day!
- Before the athlete leaves the station
    - Be sure the next station's volunteer has the athlete's HAS form in hand
    - Provide a giveaway prize (if applicable)

APPENDIX D

Volunteer Instructions for the Nutrition Station

Volunteer Instructions for the Nutrition Station

- Materials
  - Shopping table materials
    - Plastic/empty food containers, beverages, shopping bags, station sign
  - Nutrition table materials
    - Nutrition binder with photos, MyPlate, MyPlate paper visual handout, volunteer instructions, pens, station sign
  - Sugar-sweetened beverages display materials
    - Sugar-sweetened beverages display, station sign, sugar-sweetened beverages educational handout
- Goals of station
  - To assess the athlete's fruit and vegetable, calcium, snack, fast-food, and sugar-sweetened beverage consumption
  - To help the athlete choose a new fruit or vegetable to try and teach the athlete to fill half of his/her plate with fruits and vegetables at every meal
  - To help the athlete choose a drink with less sugar
- Step-by-step interaction with athlete
  - General notes
    - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
    - Please avoid:
      - Labeling foods as 'good' or 'bad.' Instead, emphasize variety and moderation.
      - Providing nutrition advice or counselling for weight loss or other medical conditions. Focus on the goals of the station and write down athlete questions on the margins of the HAS form.
      - Counselling or assessing calcium intake for athletes who are lactose intolerant.
  - Collect the HAS form from the athlete.
  - Welcome the athlete
    - Ask for the athlete's name and give your own while pointing to your name tag.
  - Give the athlete a shopping bag and approach the shopping table
    - Have the athlete select 2 to 3 foods they eat at breakfast and place them in the shopping bag. Have him/her do the same for lunch and dinner.
    - Have the athlete select one beverage they like to drink.
  - Sit down with the athlete at the nutrition table to assess his/her intake. Place the fruits and vegetables from the athlete's bag on the designated section of the MyPlate.
    - Begin fruit and vegetable intake assessment
      - If the fruit/vegetable section of the MyPlate is filled
        - Affirm his/her choice to eat fruits and vegetables.

        - Educate: *"An important part of a healthy diet means half of your plate has fruits and vegetables."*
        - Mark the HAS form with 3-5 servings per day. If the selections overflow the MyPlate section, mark >5 servings.
    - If the fruit/vegetable section of the MyPlate is not filled
        - Bring out the additional basket of fruits and vegetables that is located at the table. Photos in the nutrition binder may also be used.
        - Ask: *"Are there other fruits and vegetables you eat but didn't choose earlier?"*
        - If they end up filling the MyPlate section: affirm his/her choice to eat fruits and vegetables.
            - Educate: *"An important part of a healthy diet means half of your plate has fruits and vegetables."*
                - Mark 3-5 servings per day on the HAS form.
        - If they can't fill the MyPlate section
            - Ask: *"Are there any fruits and vegetables in this bag that you are willing to try?"* Circle these items on the MyPlate paper visual and encourage him/her to hang the visual on your fridge to remember to eat and shop for the selected items.
            - Educate: *"An important part of a healthy diet means half of your plate has fruits and vegetables."*
            - Mark the HAS form with 1-2 servings per day, <1 serving per day, or never eats.
- Begin calcium intake assessment
    - If the MyPlate section is filled (>3 calcium sources)
        - Affirm the athlete's choice to eat foods with calcium.
        - Mark the HAS form with 3 servings per day.
    - If the MyPlate section has 2 or fewer calcium selections
        - Show the athlete photos of calcium foods from the nutrition binder.
        - Ask: *"Do you see other calcium foods you eat?"*
        - Mark the HAS form based on his/her number of selections from the shopping table and nutrition binder.
- Begin fast food intake assessment
    - If the athlete selected 1 or more fast food items
        - Ask: *"How often do you eat fast food?"* (daily, weekly, monthly, or almost never).
        - Mark the HAS form accordingly.

- If the athlete didn't select fast food items
  - Show him/her photos of fast foods in the nutrition binder.
  - Ask: *"Do you eat any of these fast food items?"*
  - Ask: *"How often do you eat fast food?"* (daily, weekly, monthly, or almost never).
  - Mark the HAS form accordingly.

- Begin snack intake assessment
  - If the athlete selected 1 or more snack items
    - Ask: *"How often do you eat snacks?"* (every day, several times a day, or never).
    - Mark the HAS form accordingly.
  - If the athlete didn't select snack items
    - Show him/her photos of snacks in the nutrition binder.
    - Ask: *"Do you eat any of these snack items?"*
    - Ask: *"How often do you eat snacks?"* (every day, several times a day, or never).
    - Mark the HAS form accordingly.
- Begin sugar-sweetened beverage intake assessment
  - If the athlete selected a sugar-sweetened beverage from the shopping table
    - Ask: *"How often do you drink sugar-sweetened beverages?"* (daily, weekly, monthly, almost never).
    - Mark the HAS form accordingly.
  - If the athlete didn't select a sugar-sweetened beverage
    - Show him/her photos of sugar-sweetened beverages in the nutrition binder.
    - Ask: *"Do you drink any of these beverages?"*
    - Ask: *"How often do you drink these beverages?"* (daily, weekly, monthly, almost never).
    - If they do not drink sugar-sweetened beverages at all, affirm his/her choice.
    - Mark the HAS form accordingly.
  - Lead the athlete to the sugar-sweetened beverage station.
    - Educate: *"Drinks often have more sugar than we might think and can lead to weight gain."*
    - Show the athlete other drink options (flavoring water with fruit or sugar-free powder packets).
    - Give the athlete the sugar-sweetened beverages handout and encourage the athlete to hang it on his/her fridge or to give it to a caregiver.

- After activity completion
  - Verbally and physically guide the athlete to the next station.

            - Do not leave the athlete standing alone if the next station is full and wait until an available volunteer can assist him/her.
            - Make sure the athlete has his/her HAS form to present at the next station.
        - Wish the athlete good luck on his/her upcoming events during the day!
- Before the athlete leaves the station
    - Ensure the nutrition portion of the HAS form is complete
    - Give him/her a MyPlate educational handout if applicable
    - Give him/her a sugar-sweetened beverage educational handout
    - Provide a giveaway prize (if applicable)

APPENDIX E

Sugar-Sweetened Beverages Display


RETHINK
YOUR DRINK

APPENDIX F

Sugar-Sweetened Beverages Education Sheet

Drinking beverages with sugar is a hidden source of calories which may cause weight gain.
Choose water instead!

APPENDIX G

Volunteer Instructions for the Hand Washing Station

Volunteer Instructions for the Hand Washing Station

- Materials
  - Glo-Germ lotion, ultraviolet light wand, basketball, water bottle, keys, hand sanitizer (bulk), volunteer instructions, pens, station sign
- Goals of station
  - To educate the athlete about the importance of hand washing and to demonstrate proper hand washing technique
- Step-by-step interaction with athlete
  - General notes
    - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
  - Welcome the athlete
    - Ask for the athlete's name and give your own while pointing to your name tag.
  - Complete HAS form
    - Take the athlete's HAS form and ask the screening question corresponding to hand washing.
      - Mark the HAS form accordingly.
  - Hand washing display
    - Educate: *"Germs make us sick. They can be passed from one place to the next on things we touch all the time."*
    - Shine the basketball, keys, and water bottle with the ultraviolet light wand and point to the areas that are illuminated due to the Glo-Germ lotion.
    - Educate: *"We can prevent passing germs by washing off of our hands before we eat, after we use the bathroom, or when we touch things other people have touched."*
  - Hand washing demonstration
    - Offer some hand sanitizer to the athlete and take some for yourself. Explain you will walk him/her through the proper way to wash his/her hands.
    - Rub your hands together as if you were washing your hands.
    - Educate: *"You must wash for 20 seconds each time* (the time it takes to sing the alphabet or happy birthday slowly) *and be sure to scrub your fingernails and between your fingers."*
  - After activity completion
    - Verbally and physically guide the athlete to the next station.
      - Do not leave the athlete standing alone if the next station is full and wait until an available volunteer can assist him/her.
      - Make sure the athlete has his/her HAS form to present at the next station.
    - Wish the athlete good luck on his/her upcoming events during the day!
- Before the athlete leaves the station
  - Complete the hand washing portion of the HAS form

- Provide a giveaway prize (if applicable)

APPENDIX H

Volunteer Instructions for the Tobacco Avoidance Station

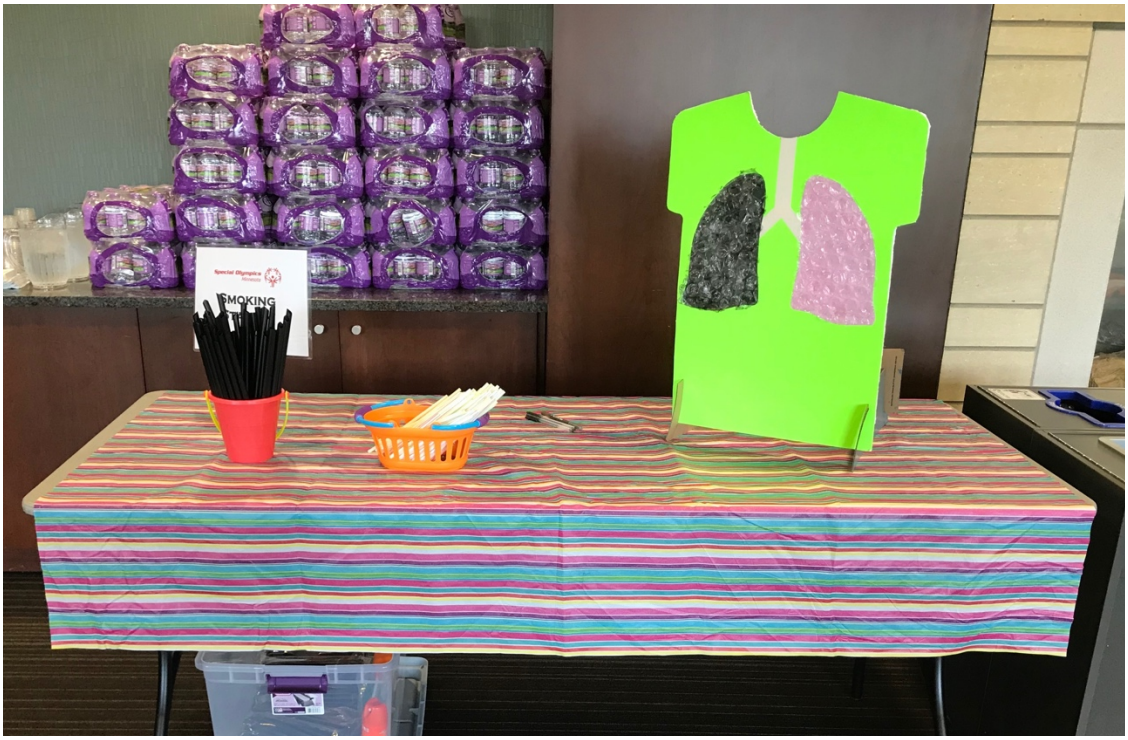
Volunteer Instructions for the Tobacco Avoidance Station

- Materials
    - Large diameter straws, small diameter straws, garbage bin, damaged lung display, volunteer instructions, pens, station sign
- Goal of station
    - To educate the athlete about the negative consequences of tobacco use and provide him/her with tobacco avoidance techniques
- Step-by-step interaction with athlete
    - General notes
        - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
    - Welcome the athlete
        - Ask for the athlete's name and give your own while pointing to your name tag.
    - HAS form
        - Take the athlete's HAS form and ask the screening question corresponding to tobacco use.
            - Mark the HAS form accordingly.
    - Straw activity
        - Hand the athlete a large diameter straw.
            - Instruct: "T*ake a deep breath through the straw."* Discard the used straw.
        - Hand the athlete a small diameter straw.
            - Instruct: "T*ake a deep breath through the straw."* Discard the used straw.
        - Educate: *"Smoking tobacco hurts our lungs and causes breathing to be more difficult. This is like how breathing out of the smaller straw was more difficult than the larger straw."*
    - Smoking lung model
        - Show the athlete the healthy versus smoker's lung model.
        - Educate: *"Tobacco changes the lungs and causes them to become black and hard. This makes it harder for our lungs to move properly and breathe."*
        - Educate: *"Second-hand smoke, which we get when we are around other people who are smoking, can damage our lungs as well."* If there are people in his/her lives who smoke, encourage the athlete to ask him/her to stop or move to a different room.
    - After activity completion
        - Verbally and physically guide the athlete to the next station.
            - Do not leave the athlete standing alone if the next station is full and wait until an available volunteer can assist him/her.
            - Make sure the athlete has his/her HAS form to present at the next station.
        - Wish the athlete good luck on his/her upcoming events during the day!

- Before the athlete leaves the station
    - Complete the tobacco avoidance portion of the HAS form
    - Provide a giveaway prize (if applicable)

APPENDIX I

Lung Display Model


SMOKING

APPENDIX J

Volunteer Instructions for the Sun Safety Station

Volunteer Instructions for the Sun Safety Station

- Materials
  - Hat, sunglasses, solar active bracelets, sunscreen, volunteer instructions, pens, station sign
- Goal of station
  - To educate the athlete about protection from the sun and help the athlete identify situations when sun protection is needed
- Step-by-step interaction with athlete
  - General notes
    - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
  - Welcome the athlete
    - Ask for the athlete's name and give your own while pointing to your name tag.
  - HAS form
    - Take the athlete's HAS form and ask the screening question corresponding to sun safety
      - Mark the HAS form accordingly.
  - "Sun armor" demonstration
    - Educate: *"The sun gives off dangerous rays that we should protect ourselves from to avoid burns and skin problems."*
    - Educate: *"We should use 'sun armor' or barriers to protect ourselves from the damage the sun can do."*
    - Put on the hat, sunglasses, and mime putting on the sunscreen and verbalize that the barriers you are putting on are important "sun armor" items.
  - Give the athlete a solar bracelet (if applicable)
    - Explain that a solar bracelet can help him/her understand when the sun can be damaging. Give him/her a bracelet.
    - Educate: *"When the bracelet changes color, you should put on 'sun armor.'"*
  - After activity completion
    - Verbally and physically guide the athlete to the next station.
      - Do not leave the athlete standing alone if the next station is full and wait until an available volunteer can assist him/her.
      - Make sure the athlete has his/her HAS form to present at the next station.
    - Wish the athlete good luck on his/her upcoming events during the day!
- Before the athlete leaves the station
  - Complete the sun safety portion of the HAS form
  - Provide a giveaway prize (if applicable)

APPENDIX K

Volunteer Instructions for the Hydration Station

Volunteer Instructions for the Hydration Station

- Materials
    - Urine color display, display water bottle with cut up fruit, water bottles, volunteer instructions, pens, station sign
- Goal of station
    - To educate the athlete about signs of dehydration and provide strategies to drink more water
- Step-by-step interaction with athlete
    - General notes
        - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
    - Welcome the athlete
        - Ask for the athlete's name and give your own while pointing to your name tag.
    - HAS form
        - Take the athlete's HAS form and ask the screening question corresponding to hydration
            - Mark the HAS form accordingly.
    - Urine color display
        - Point out that the water in the bottles is different colors.
        - Educate: *"The water represents urine. Dark colored urine has little water in it and light-colored urine has more water in it. Our urine becomes dark when we are dehydrated and is lighter in color when we are drinking enough water. If you notice that your urine is darker color, it is important to drink more water."*
    - Flavored water display
        - Educate: *"You should drink more water to stay hydrated, even if your urine isn't dark in color*."
        - Show the athletes the display water bottle and explain they can add fruit or sugar-free flavor packets to make his/her water more exciting.
        - Provide the athlete with a complementary water bottle (if available) and encourage him/her to stay hydrated.
    - After activity completion
        - Verbally and physically guide the athlete to the next station.
            - Do not leave the athlete standing alone if the next station is full and wait until an available volunteer can assist him/her.
            - Make sure the athlete has his/her HAS form to present at the next station.
        - Wish the athlete good luck on his/her upcoming events during the day!
- Before the athlete leaves the station
    - Complete the hydration portion of the HAS form
    - Provide a giveaway prize (if applicable)

APPENDIX L

Volunteer Instructions for the Follow-Up and Goal-Setting Station

Volunteer Instructions for the Follow-Up and Goal-Setting Station

- Materials
  - Health concern forms, pens, volunteer instructions for station, whiteboards, photo booth props, photo printing materials, BMI chart, station sign, chairs
- Volunteers
  - Healthcare providers and healthcare students only (if available)
- Goal of station
  - To ensure the athlete's HAS form is filled out in its entirety, highlight any concerns for a primary care provider, and provide the athlete with a tangible health goal reminder
- Step-by-step interaction with athlete
  - General notes
    - Be friendly, attentive, and patient. Some athletes may be nervous or in a hurry. Guide the athlete through the station at his/her own pace.
    - Please avoid
      - Giving specific instruction about what an athlete should do to address a health concern. Instead, point out what is concerning to the athlete and his/her parent/caregiver (if present) and encourage him/her to see a healthcare provider.
  - Welcome the athlete
    - Ask for the athlete's name and give your own while pointing to your name tag.
  - Look through HAS form to be sure that all areas are completed
    - If areas are left uncompleted, ask corresponding questions to finish the form.
  - Briefly glance at form information for any concerning areas
    - BP over 160 systolic and/or over 100 diastolic
      - Be sure that the athlete has been directed to a clinical director at the vital measurement station. If they have not, instruct the athlete to remain seated and notify a clinical director.
    - Weight and height correspond to a BMI > 30 using the BMI chart
    - Smoking
    - Other notes that have been made by volunteers (lactose intolerance, etc.)
  - Make a note of any health concerns on the Health Concern form
    - Instruct: *"Give this form to your caregiver. It is for your doctor to see."*
  - Affirm the athlete for what they learned today.
  - Ask: *"Do you have a health goal in mind from what you learned here today?"*
    - If the athlete cannot decide on a health goal, feel free to suggest one or two based on his/her HAS form responses.
      - Ex: *"I see you drink a lot of sugary drinks. You could make it your goal to drink more water instead!"*

        - Write the health goal on a whiteboard and guide the athlete to the photo station.
        - Take a fun photo of the athlete (with friends and family, if present) with his/her health goal. Make use of fun photo props.
            - Print and give the photo to the athlete as a reminder of what they learned at the Health Promotion Program today.
            - Ensure all props and whiteboards are left at the station
    - Collect the HAS form
    - Thank the athlete for his/her participation in the Health Promotion Program
    - Answer any questions before guiding the athlete out of the Health Promotion Program
- Before the athlete leaves the station
    - Complete the HAS form
    - Give out a Health Concern Form (if applicable)
    - Collect the athlete's HAS form
    - Provide a giveaway prize (if applicable)