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Outdoor Recreation Benefits and Promotion through a Youth-Focused Program in State Parks

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OUTDOOR RECREATION BENEFITS AND PROMOTION THROUGH A YOUTH-FOCUSED PROGRAM IN STATE PARKS

BY

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THESIS ACCEPTANCE PAGE

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This thesis is approved as a creditable and independent investigation by a candidate for the master's degree and is acceptable for meeting the thesis requirements for this degree. Acceptance of this does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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This thesis is dedicated to my sister, who has always been my #1 fan and the first person I can turn to for advice. Thank you for your endless support and for always believing in me.

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ABSTRACT

OUTDOOR RECREATION BENEFITS AND PROMOTION THROUGH A YOUTH-FOCUSED PROGRAM IN STATE PARKS

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A family's participation in outdoor recreation activities can provide numerous benefits to each individual. Children's participation is influenced from various factors, but parents have one of the greatest influences on their child's outdoor recreation behavior. The purpose of this study is to assess the outcomes of a statewide outdoor recreation program in relation to using state parks as outdoor wellness centers, as well as investigate the relationship between parents' outdoor recreation participation and perception and their children's outdoor recreation involvement. A total of 104 parents or guardians recalled their family's participation in the Go Forth program. Those responses were analyzed and used for this study. The survey was split into five sections (program participation, state park use and outdoor recreation, physical activity, outdoor activity and benefits, and demographics) to better understand the outdoor recreation participation of families.

Descriptive analysis showed participants were already frequent state park users and preferred non-consumptive outdoor recreation activities. Popular activities included hiking, picnicking/outdoor cooking, and swimming. Chi-square analysis results showed parents who prefer consumptive outdoor recreation activities place a higher importance for their children to participate in shooting sports, fishing, and hunting. Pearson correlation indicated a substantial positive relationship between parents' physical activity

level with their children's physical activity level (r = .60). Although parents, in general, reported a high support of their children observing various benefits by using state parks, the results of paired t-tests showed parents had a significantly higher expectation in quality service of state parks provided than they perceived. Due to most of the participants already being frequent outdoor recreation users, providers should find increasingly engaging ways to reach non-frequent users. Importance of educational programs such as, visiting nature centers, was revealed and suggests the possibility of increased programming in this area as well as the potential for collaboration and partnerships with other agencies like schools or libraries.

INTRODUCTION

Outdoor recreation provides mental, social, and physical benefits to all individuals with varying demographics and diverse backgrounds (Maller et al., 2005). For example, both adults and children can see benefits such as restoration in attention, stress release, and improved performance at work or school by spending time in nature (McCormick, 2017). Natural, green areas can also be a place for children to become affiliated with people and the area around them, as well as encourage children to participate in imaginative play by themselves or with others (Chawla, 2015). Despite the numerous benefits of participating in outdoor recreation, participation of young boys and girls have decreased with average annual outings falling from 91 in 2012 to 77 in 2019 (Outdoor Foundation [OF], 2020). Recent studies have investigated various factors that might influence a child's participation in outdoor recreation, including interpersonal influence (e.g., parents and friends), community influence (e.g., rural population, urban population, nearness to parks), and societal influence (e.g., technology) (Brouwer et al., 2018; Larson et al., 2019; Reimers et al., 2018; Schaefer et al., 2014). Among these factors, parents have one of the most direct influences on their children's outdoor recreation behavior, influencing how their child interacts with and thinks about the outdoors (McFarland et al., 2014).

Parents can play a vital role in the encouragement or discouragement of their children's outdoor recreation participation and behaviors. Depending on parental influence, children will have varying outdoor recreation experiences. Actions such as high parental encouragement directly affects children and their time total time spent outdoors (Cleland et al., 2010). Mothers have been shown taking a more supportive role

(e.g., scheduling or enrolling child in outdoor activities) while fathers are more likely to play a more active role (e.g. physically participating) with their child in outdoor recreation (Beets et al., 2007). A parent's personal positive perception of nature can result in a more positive view of their child's outdoor recreation while also lowering the amount of time the child spends inside (Hammond et al., 2011). Children can also influence adult outdoor participation as adults with children have reported spending more time outdoors compared to adults without children (OF, 2020). Through these parent-child relationships and interactions, a child's connection to nature is established. This groundwork laid out by parents may have a lasting effect, furthering the need for a better understanding and comprehension between the two.

Outdoor recreation could be beneficial for youth to enjoy physical activities in a natural environment. The amount of time a child spends outdoors shows a positive correlation with their moderate-to vigorous physical activity (MVPA) levels, but a negative correlation with their sedentary time (Schaefer et al., 2014). In other terms, longer hours of playtime outdoors are associated with higher levels of MVPA for children (Faulkner et al., 2015). As suggested by the Centers for Disease Control and Prevention (CDC), children ages 6 through 17 should do 60 minutes or more of MVPA each day (U.S. Department of Health and Human Services, 2018). The most popular outdoor recreation activities for children are biking, running, camping, fishing, and hiking, all of which facilitate the young generation to be physically active and live healthy lifestyles while enjoying the outdoors (OF, 2020).

The United States (US) has seen a nationwide movement that generates awareness and a need for action to offer outdoor recreation in order to provide opportunities that

better youth's physical activity and health. The National Park Service (NPS) has initiated and introduced numerous projects to the public, with a specific focus on children. The Every Kid Outdoors Initiative was created to inspire fourth grade students to explore their surrounding parks and outdoor areas (National Park Foundation [NPF], 2021). Through the program, students receive a free pass to national parks for one year. Children in fourth grade (aged 9-11) are in a developmental stage leading them to begin learning about their surroundings, including the outdoors and nature (U.S. Department of the Interior, 2019). Other programs, like Open Outdoors for Kids, provide hands on and engaging opportunities for all children that help them learn about the history of themselves and the land (NPF, 2020). Because of the rapid decline of children spending time outdoors, the National Wildlife Federation (NWF) created "Green Hour" to encourage children and their parents to spend one hour a day playing and learning about the outdoors, with hopes to create healthy children with a connection to nature (NWF, 2021). By using this critical time of development, recreation providers can begin to nurture a better relationship and understanding between the outdoors and children, with hopes to create a generation of outdoor advocates. Additional programs have been created to aid in the encouragement of park use with a focus on an individual's health. For example, *Park Prescriptions (Park Rx)* are used to promote the benefits of parks and encourage the use of the outdoors and being healthy (James et al., 2019). A study using Park Rx prescribed participants to visit local parks three times a week and found that increasing park visits helped children to build resilience and reduce their stress level (Razani et al., 2019).

In order to provide high quality outdoor recreation services for both adults and children, it is important to understand their needs and experiences in using parks and

recreation related programs and facilities. In general, parks and recreation can provide important features such as preservation of open space, making the community a desirable place to live, and improving physical health and fitness (Liu et al., 2019). Several concepts have been used to allow outdoor recreation professionals to successfully allocate and meet the demands of consumers, such as importance-performance analysis (IPA; Tarrant & Smith, 2002), service quality (Hamilton et al., 1991), and satisfaction (Eng & Niininen, 2005). Both negative and positive aspects of park attributes (landscape, playgrounds, cleanliness, signage, etc.) can directly impact a recreation user's overall satisfaction, but a negative performance of an attribute has shown to have a greater impact than a positive performance (Eng & Niininen, 2005). A misalignment in expectations and provision of services can have a significant effect on outdoor recreation users and their satisfaction. The use of an effective and efficient importance-performance analysis allows for recreation managers to successfully allocate their services and meet the demands of consumers (Tarrant & Smith, 2002).

Theoretical Framework

This study is framed using the ecological model, developed by Bronfenbrenner (1977), which shows tiered levels of interaction that affect human development. These levels of interaction are not limited to just one setting of an individual but instead on the surrounding environment. These systems include the microsystem, the mesosystem, the exosystem, and the macrosystem. According to Bronfenbrenner (1977), the microsystem is the relationship between a person and their immediate setting (home, school, workplace, etc.). The mesosystem is the connectedness of major settings in a person's life (interactions between a child's family and school). Settings that influence and affect the

individual but which the individual does not directly participate in is called the exosystem (government, mass media, etc.). The macrosystem consists of the cultural influences (educational, economical, legal, and political systems) that influence how people interact with one another in various settings. Finally, the chronosystem represents change that people go through and the influences it has across all other systems (a child going from elementary school to middle school; Neal & Neal, 2013). One author views the ecological model as a theory in which all parts of human development is connected and bound together by "context, culture, and history" (Darling, 2007, p.204).

The ecological model has been used in multiple studies to provide further insight on the relationships between various groups of people in outdoor recreation. This ecological perspective can also be utilized to better understand children's outdoor recreation habits and the different levels of influence (e.g., interpersonal, community, societal) on a child's participation (Larson et al., 2014; O'Farrell et al., 2021). O'Farrell and Liu's (2020) study focusing on programming and partnerships for outdoor recreation centers, found that outdoor recreation centers are at the mesosystem level of the model by providing outdoor education opportunities and creating a network of different organizations related to outdoor recreation. Watling and Neal (2013) have created a networked reformulation ecological systems theory that shows the model as overlapping sections, instead of tiered levels, which are both directly and indirectly connected to other sections by the participant's social interactions. Through this re-evaluated model more complex relationships are assessed, as the "how" and "with whom" people interact is focused on instead of the "where" of the original model. The aim of this study is to

provide additional research as to how outdoor recreation is utilized in a person's life, specifically parents and their children.

The ecological model and its accompanying influences on children's outdoor recreation will be prevalent throughout this paper as the study further highlights the importance of state agency and school partnerships, as well as encourages people to take advantage of the benefits of being outdoors. This will be done by focusing on how parents and children use state parks and recreate outdoors. Therefore, the purpose of this study is to (1) assess the outcomes of a statewide outdoor recreation program in relation to using state parks as outdoor wellness centers, and (2) investigate the relationship between parents' outdoor recreation participation and perception and their children's outdoor recreation involvement.

LITERATURE REVIEW

National Trends and Challenges in Outdoor Recreation for Youth

In 2019, about 50% of the US population participated in at least one outdoor activity, with the most popular outdoor activities being running, fishing, hiking, biking, and camping (OF, 2020). Overall, there has been a downward trend in outdoor recreation participation, as the average number of outings for a person has gone down by 17% from 2015 to 2020, as well as there being less highly active participants each year. Children's participation rates have fallen for both boys and girls, specifically boys ages 13-17 years old seeing a decline of 4% from 2012 to 2019. Adults with children see much higher outdoor participation rates when compared to adults without children. These households containing children aged six to twelve have the highest outdoor participation rate (OF, 2020).

Several factors exist that contribute to the recent decline in outdoor recreation participation. For about the last decade, frequent outdoor recreation participants (people participating in outdoor recreation 52 or more times a year) total outings have fallen from 39% to 35%, with these trends not only being unique to adults but children as well (OF, 2020). Technology's ever-growing role in children's lives is placing a barrier that both prevents children from going outside and even distracting them when they do go outside (Mackenzie et al., 2017). Burns et al. (2007) pointed out that technology substantially affects children's outdoor time. Further indication by Mackenzie et al. (2017) shows that children are faced with more homework responsibility and lack of transportation to outdoor settings. Larson et al. (2019) found an inverse relationship between outdoor time and screen time for children, meaning as children get older, they are also having increased screen time. Even in outdoor settings, older children are more likely to use electronics than younger children (Larson et al., 2011).

Moreover, the COVID-19 pandemic that began in January of 2020 in the United States, has brought new challenges to participating in outdoor recreation due to health concerns and travel restrictions, yet it also presented new opportunities. Some studies showed more participation, while others saw a decrease in participation. A national study showed that the pandemic encouraged individuals to begin or resume outdoor activities for them to get some exercise, stay healthy, get out of the house, get or maintain fitness, and have something fun to do (Outdoor Industry Association [OIA], 2021). COVID-19 presented many people additional time to participate in outdoor activities during the pandemic. To improve retention of outdoor recreation participation, simple outdoor activities, such as walking, running, or hiking should be encouraged, as many people can

easily participate in such pursuits (OIA, 2021). In contrast, other studies have shown contradicting results that the pandemic has had a negative impact on leisure time by limiting physical activity and outdoor activity choices (Liu et al., 2021). Television and time spent online plays a large role in people's lives, and due to the pandemic, there has also been an increase in watching television and spending time online (OIA, 2021; Xiang et al., 2020).

Youth Participation in Outdoor Recreation

When outdoors, children are able to make their own decisions and play with their friends, all while benefitting physically, mentally, and socially. Although outdoor recreation participation reaps many benefits, physical health has seen significant benefits as green space visits increases the chances for someone to meet recommended physical activity guidelines (Flowers et al., 2016). Gray et al. (2015) found that time spent outdoors for children aged 3 to 12 years old had a positive relation to physical activity and a negative relation to sedentary behavior. Through continuous outdoor participation, children have healthier physical conditions and find ways to overcome physically enduring challenges (Lekies et al., 2015). Visits to state parks are one of the many ways that children are experiencing the outdoors and being physically active. Larson et al. (2015) showed that youth who visited non-urban state parks had high MVPA levels, with physical activity levels increasing by thirty-five minutes for each additional hour that the child spent at the park.

Not only are physical benefits experienced when exposed to nature, mental and social benefits occur as well. Participants in an outdoor adventure education program connected nature to their psychological well-being saying they felt more balanced,

comfortable, and at peace, as well as finding a “mental quiet” after being outdoors (D’Amato & Krasny, 2011). Children who have access to green space are found to have better attention restoration, improved behavior and symptoms related to attention deficit hyperactivity disorder, and better control of stress (McCormick, 2017). Increased outdoor recreation opportunities encourages and fosters social interactions which in and of itself has an overall effect on a person’s overall health and their perceptions of nature (Larson et al., 2013; Michimi & Wimberly, 2012).

While benefits of outdoor recreation are consistent for both rural and urban dwellers, previous research has analyzed specifically how people in rural and urban areas view and interact with the outdoors. Rural community parks and recreation departments play an important role in their community’s quality of life by understanding the recreational needs of people (Payne & Schaumleffel, 2008). Geographic dispersion, more local government, and minimal revenue generation each contribute to the higher expenses associated with providing outdoor recreation in rural areas (Schaumleffel & Payne, 2010). As for urban outdoor recreation, a systematic review by Kondo (2015) showed that improved access to green areas combats declining physical activity levels, as well as improves mental health. Collaboration between different agencies is one way to increase outdoor recreation options for urban dwellers (e.g., hunting, fishing, etc.) as well as benefitting each partner that is involved (Carmichael & McCole., 2014). Not only is their potential in collaboration, but involvement through outdoor education opportunities can also provide community benefits by acting as a tool to connect people in a community and therefore build social capital (Beames & Atencio, 2008).

Although there are current barriers, challenges, and an overall decline in outdoor recreation participation children are recognizing benefits such as the freedom that comes from being outdoors (Burns et al., 2007). With this freedom children can participate in popular activities such as biking, running, camping, fishing, and hiking (OF, 2020). Youth outdoor recreation participants that have a strong affinity with nature are shown to spend more time directly experiencing and interacting with nature (Soga et al., 2018), suggesting the importance of fostering the relationship between both children and the outdoors. A study examining the outdoor recreation behaviors of children between the ages of nine and seventeen did show most of the research participants, spending 'some time' outdoors or 'a majority of their time' outdoors (Schaefer et al., 2014). Some differences do exist between children with a large one being gender of the child. Boys tend to spend more time outdoors when compared to girls (Cleland et al., 2008; Faulkner et al., 2015). Children, younger than eleven years old, who participate in outdoor recreation activities are also more likely to have pro-environment attitudes with those outdoor experiences staying with them throughout their life and having a lasting effect (Wells & Lekies, 2006).

Parental Influence on Outdoor Recreation

Parents can directly influence how much time their child spends outside and what type of activities they participate in, as parents' personal interests can be shared and influenced onto their children. With safety in mind, parents' neighborhood perceptions such as strangers and fast drivers also affect the duration of their child's outdoor play time (Faulkner et al., 2015). Many parents recognize the various benefits (e.g., cognitive, psychosocial, and physical) that children experience when playing outdoors and have

identified specific benefits such as spending quality time with friends and family and improving physical health as the most important benefits of outdoor recreation participation (Larson et al., 2013).

Although parents may recognize the benefits of the outdoors, their support of their children's participation is equally as important. When parents support a sport or outdoor activity their child is participating in, overall satisfaction of the child is increased (Hoyle & Leff, 1997). Outdoor free play is seen as important for children and allows them to better their large motor skills, freely explore their outdoor surroundings, and assess the risks they come across (McFarland & Laird, 2018). Research has further shown significant differences in youth outdoor participation in relation to a family's cultural background. Danish parents have linked independence and creativity with outdoor play while US parents have linked them with indoor play, showing how the cultural context in which children are raised influences the beliefs of a child's play environment and time spent outside (Vandermaas-Peeler et al., 2019).

Youth are shown to have high family satisfaction when their families frequently participate in family leisure activities, suggesting the need for stability and consistent participation in family activities, especially in adolescence (Zabriskie & McCormick, 2003). McFarland et al. (2014) suggests parents should take the responsibility of offering and encouraging outdoor recreation activities to their children. Using a systematic review, Xu et al. (2015) found young children's physical activity levels showed a moderate to strong positive correlation with their parents' physical activity levels. Outdoor recreation activities outside of a family's daily routine could strengthen the

family ties, improve family communication and cohesion, and increase trust and support amongst family members (Huff et al., 2003).

Parks as a Wellness Center Outdoor Recreation

State parks provide opportunities to address and combat nature-deficit disorder as well as encourage healthy development for children and improve physical health of diverse populations (Larson et al., 2013; Larson et al., 2014). State parks can be used as an outdoor playground to increase children's physical activity levels (Larson et al., 2013; Larson et al., 2014), as 1 in 5 children are affected by obesity resulting from lack of physical activity (CDC, 2021). By understanding the reasons as to why people are visiting parks, outdoor recreation providers can find ways to encourage use of parks as a means to address health concerns and remain healthy. For example, Stanis et al. (2010) indicated 40% of users of a Minnesota park were outside of the healthy weight range and suggested that there are opportunities for parks to act as a setting for healthy recreation behaviors. Providing clear and direct information on outdoor recreation activities and their benefits in a park, such as how far a mile is on the trail or the location of outdoor exercise equipment, could provide additional assistance to users on how to enjoy the park while gaining some health benefits (McNeely et al., 2014).

Some studies have mentioned the importance of placing emphasis on picnic areas, as these areas could be an attraction for nontypical users (Larson et al., 2014; Stanis et al., 2010;). Picnic areas are easily accessible and do not necessarily need instruction on how to use the area, allowing the space to be relatively easy for everyone to use. Attracting these nonfrequent visitors may encourage their continued use of parks while showcasing the benefits the park can have. Larson et al. (2014) also found that amongst all

demographics of a study, the most important features park users consider were: A safe environment, being active with friends, and enjoying natural scenery. This type of understanding shares detailed information that park providers can use to enhance their service quality and the overall satisfaction of visitors.

Parks offer plentiful opportunities for an array of individuals looking to participate in an outdoor recreation activity. Specifically, children will frequently participate in activities such as playing on playgrounds, cookouts, swimming, jogging/running and teams sports (Larson et al., 2013). While these are popular activities among many children, participation may be different between older and younger youth participants. For example, in a study examining the behaviors of children during outdoor recreation participation within state parks, Larson et al. (2013) found very young children (ages 0-5) enjoyed playgrounds while teens (ages 13-17) preferred relaxing and canoeing/kayaking more.

To improve visitors' outdoor recreation experience at parks or protected areas, several concepts have been applied to assess the service performance, such as satisfaction and perceived benefits. Service quality is useful to understand "the gap between what visitors desire from a service and what is perceived to be received" (Hamilton et al., 1991, p.1). A better understanding of a visitor could lessen the gap and increase satisfaction levels. Furthermore, what benefits users are seeking can help distinguish user groups and allow providers to tailor to certain segments within parks and distribute resources appropriately, resulting in optimal management and user satisfaction (Zanon et al., 2014). One way to achieve high service quality is collaboration between various sectors (e.g., private, public, non-profit), with success occurring when values and

objectives are aligned to have an impact (Levitt et al., 2014). Tools such as the Importance Performance Analysis (IPA) can be used to promote the continued improvement of parks and services of recreation agencies, while being able to focus on attributes considered to be the most important by users (O'Neill & Palmer, 2004; Tarrant & Smith, 2002).

METHODS

Program Background

Go Forth is under the overarching initiative Every Kid Outdoors, which is run by the National Park Service (NPS). Through this program fourth graders and their families are allowed free access to federal public lands starting September 1st and running through August 31st. Fourth graders are chosen for this outdoor initiative due to research indicating that children aged 9 to 11 are open to new ideas and beginning to learn about the world around them (U.S. Department of the Interior, 2021).

In the state of South Dakota, Game, Fish, and Parks (SDGFP) partners with the Department of Health to offer the Go Forth program, with the same goal of getting fourth grade students outside and into state parks. Students with a pass receive a free daily license, half off an annual state park license, a free 3-year subscription to the Conservation digest, and a coupon for a free 1-hour equipment rental. Passes are given to students through their schools, including public, private, or tribal schools (SDGFP, 2020). With thirteen state parks and forty-three recreation areas (South Dakota Department of Tourism, 2021; SDGFP, 2021), the state of South Dakota has an abundant variety of outdoor recreation areas for children and their families to enjoy. Not only are recreation

services and areas provided at the state level, but South Dakota cities offer municipal parks for residents to enjoy as well.

Sample and Data Collection

For this study, parents or guardians of fourth grade students who received a Go Forth pass were asked to participate in a survey asking about their park use and physical activity participation through the program on both the participating children and their families. The survey was created through QuestionPro, an online and self-administered questionnaire, and was accessible from February to April of 2020 (Appendix A). A list of Go Forth program participants from 2016 to 2019 was provided by SDGFP. Approximately 1,000 survey invitations were shared with Go Forth program participants via email, and were distributed in three rounds (February, March, and April) in 2020. A total of 178 individuals began the survey, with 115 indicating their family did participate in the program and 63 indicating they could not recall their participation. Those who could not recall their participation in the program were excluded from the rest of the survey. Eleven cases were removed from further analyses due to incompletion. The research procedure and survey instrument of the study were approved by the Institutional Review Board (IRB) at the University and SDGFP management team. The IRB approval number is IRB-1907005-EXM.

Instrumentation

The survey used for this study consisted of five sections including program participation, state park use and outdoor recreation, physical activity, outdoor activity and benefits, and demographics.

Program Participation

The first section of the survey focused on better understanding participants overall experience with Go Forth. Questions illustrating whether participants updated their state park pass, how far they traveled to parks, and their satisfaction allowed researchers to have an insight as to how the participants utilized their year-long pass.

State Park Use and Outdoor Recreation

Children and their families prefer various recreation opportunities and use outdoor areas and facilities differently. In this section, participants frequency of outdoor recreation and their preferences was assessed. For example, one question asked respondents to select their preferred type of outdoor recreation opportunities such as consumptive recreation activities (i.e., fishing, hunting, etc.), non-consumptive recreation activities (i.e., hiking, education programs, etc.), motorized recreation activities (ATV/ORV, motorized boating, etc.), relaxing in nature without participating in recreational activities, or no interest in outdoor recreation.

Physical Activity

The next section of the survey evaluated current physical activity levels of children and their parents or guardians and how physical activity levels may or may not have changed after participating in the Go Forth program. Based on the CDC's physical activity guidelines (U.S. Department of Health and Human Services, 2018), participants were asked to indicate how many days, within the last seven days, they participated in moderate physical activities as well as how many days their child participated in moderate physical activities. Current levels of physical activity were described as no participation in regular physical activity, participation in moderate to vigorous physical

activity for less than 150 minutes per week, or participation in 150 minutes or more of moderate to vigorous physical activity per week. Respondents were also asked how their participation and how their family's participation in physical activity changed after their involvement in the program by choosing from a 5-point Likert scale that ranged from less participation to more participation. How much awareness of other activities and resources in state parks participants received after participating in the Go Forth program was also addressed.

Outdoor Activity and Benefits

The main focus of this section is to understand the importance and benefits associated with children being involved in outdoor recreation activities and by visiting state parks. The first set of questions asked the parent or guardian to rate the importance of their child being involved in six different types of outdoor recreation activities, ranging from camping, to water sports, to hunting. The second set of questions listed quality time with family and friends, physical health, nature exploration and discovery, mental health, and development of social skills as benefits that parents or guardians indicated their agreement on by using a 5-point Likert scale, with 1 being extremely unimportant and 5 being extremely important. Using the same list of benefits, the final set of questions had participants indicate how successful state parks were in providing each of the benefits.

Demographics

The last section of the survey identified various demographics of the survey participants, such as gender, age, and household income. Participants residential zip codes were also collected.

Data Analysis

Descriptive analysis will be used to report outcomes and overall experience (e.g. satisfaction, benefits, etc.) of program participation, park use and frequency, as well as demographics. Within descriptive analysis percentages, means, and standard deviations were reported. Several analyses will be used to further understand the relationship between parents' outdoor participation and perception, and their family's outdoor recreation involvement and park use. First, chi-square will be performed to examine if parents' personal outdoor recreation preference varies with their family participation in outdoor recreation, state park use (e.g., entrance license purchase), and sense of importance for their children to participate in various types of outdoor activities. Chi-square analysis will also be used to compare if parents' outdoor recreation preferences effect parents' and children's physical activity levels, perceived benefits of using parks and gained benefits in using state parks. Moreover, a series t-tests will be run to investigate if parents perceived gained benefits of their children visiting state parks differed based on the outdoor activities their family choose to do. Finally, paired t-tests will be used to examine whether there was a difference between parents' perceived benefits of children visiting state parks and the performance of those benefits by state park services. The assumption of normality and homogeneity of variance was tested prior to these analyses. All of the variables were approximately normally distributed. The statistical significance level was at the 0.05 level (p-value).

RESULTS

The majority of survey respondents were female (87%) and between the ages of 35 and 44 (67%). Most participants had a four-year college degree or higher (66%). A

little more than half of the participants (55%) indicated they had a total annual household income of $75,000 and above. A vast majority (93%) were white and married/in a domestic partnership (90%). No one identified as Native Hawaiian or Pacific Islander, Asian, or American Indian or Alaska Native. Common areas participants were from in South Dakota are Sioux Falls, Pierre, Rapid City, Watertown, Volga, and Brookings. Table 1 shows the demographics of all participants.

Table 1
Demographics of Research Participants

	Frequency	Percentage
Gender		
Male	13	13
Female	89	86
Age		
Under 18 years old	1	1
25-34 years old	10	10
35-44 years old	69	66
45-54 years old	24	23
Education		
Less than high school	1	1
High school	14	14
Vocational/trade school	10	10
Two-year college	11	11
Four-year college	44	42
Master's	19	18
Doctorate	5	5
Annual household income		
Under $25,000	2	2
$25,000-$49,999	14	14
$50,000-$74,999	12	12
$75,000-$99,999	26	25
$100,000 and above	35	34
Prefer not to answer/don't know	15	14
Marital status		
Single, never married	6	6
Single, divorced/widowed	3	3
Married or domestic partnership	95	90
Prefer not to answer	1	1
Race		
White	98	93
Black or African American	1	1

Two or more races	6	6

Assessing Go Forth Participation and State Park Use

Amongst all participants, 75 updated their one-day free pass to an annual license. The average number of adults (18 years or older) in a group was two and the average number of children was three. Most of the participants had to drive more than ten miles to visit a state park. All but 4% of respondents indicated they will dedicate the same or at least slightly more time to outdoor activities in the next year. Ninety-eight respondents were either satisfied or very satisfied with their overall experience with the Go Forth program. More than 90% of research participants reported they are likely or very likely to participate in similar programs in the future. Non-consumptive recreation activities (hiking, education programs, etc.) are the highest preferred outdoor recreation activities (44%), followed by consumptive recreation activities (hunting, fishing, etc.; 32%). Participation in the Go Forth program did not have a notable effect on parent's weekly physical activity levels or their family's weekly physical activity levels. Seventy-nine percent of parents indicated their physical activity levels stayed the same, and 75% of parents indicated their children's physical activity levels stayed the same. Awareness of different activities and resources in state parks after participation in the Go Forth also stayed the same (49%) or was slightly more (40%).

The following activities are listed in order of what families most frequently do while at a South Dakota state park/recreation area; hiking (79%), picnicking/outdoor cooking (77%), swimming (72%), fishing (67%), playing lawn games (61%), boating (58%), biking (51%), visiting nature centers (50%), RV camping (44%), visiting historic sites (44%), wildlife watching (45%), tent camping (37%), attending educational

programs (37%), attending special events (29%), team sports (27%), playing shooting sports (22%), hunting (21%), using electronic devices outdoors (17%), snowboarding/skiing (12%), OHV/ATV/UTV (9%), and golfing (9%). Some participants also indicated they did other activities and provided examples such as cabin camping, frisbee golf, geocaching, outdoor photography, playing/swimming in water, and relaxing in a hammock.

Table 2
State Park Use and Outdoor Recreation

	Frequency	Percentage
Distance from home to state park		
Less than 5 miles	7	7
5-10 miles	18	17
11-20 miles	25	24
21-50 miles	27	26
More than 50 miles	27	26
Previous visits to state parks		
Yes	101	97
No	3	3
Frequency of state park visits		
1 time	8	8
2-5 times	46	44
6-10 times	27	26
11-20 times	11	11
More than 20 times	9	9
Time dedicated to outdoor activities		
Less	1	1
Slightly less	3	3
Same	55	53
Slightly more	37	36
More	8	8
Frequency of OR* participation[1]		
Several times during the year	32	31
About once or twice per month	25	24
About once per week	23	22
Two or more times per week	23	22
Preference in OR activities		
Not interested	2	2
Consumptive recreation	34	33
Non-consumptive recreation	46	44
Motorized activities	7	7

Relaxing in nature	12	12
Other	3	3

*OR = outdoor recreation
[1]Never participate (n=0); Used to participate (n=1)

Physical Activity and Perceived Benefits in Outdoor Participation

Parents/guardians spent, on average, about three days per week participating in moderate physical activities and typically did moderate to vigorous physical activity but less than 150 minutes per week (53%). Children participated in moderate physical activities four days a week and typically did moderate to vigorous physical activity for less than 150 minutes (37%) or more than 150 minutes (40%) per week for more than six months. About 75% of parents/guardians indicated that both their personal physical activity amount and their family's physical activity amount was the same after participating in the Go Forth program. Participants were aware of activities and resources in state parks the same amount (49%) or slightly more (40%).

Parents or guardians indicated the highest importance for their children to participate in land sports (M = 4.07), camping (M = 3.87), and fishing (M = 3.72) on a 5-point scale. Parents or guardians perceived spending quality time with family and friends (M = 4.70) and exploring and discovering nature (M = 4.52) as the two most recognizable benefits when their child visits state parks. In terms of parents experience visiting state parks, they also perceived state parks to have successfully provided quality time for families and friends (M = 4.52) as well as assisted with nature exploration and discovery (M = 4.38) for their children. Additional perceptions of benefits and experiences of parents when visiting state parks can be found in Table 3.

Table 3
Parents' Perception of Importance of Various Benefits and Experience of Visiting State parks

	Mean	SD
Importance of child activity involvement		
Camping	3.87	.91
Water sports	3.55	.87
Shooting sports	3.15	.93
Fishing	3.72	.81
Hunting	3.33	1.02
Land sports	4.07	.80
Benefits associated w/child visiting state parks		
Quality time w/family & friends	4.70	.59
Physical health	4.38	.67
Nature exploration & discovery	4.52	.59
Mental health	4.43	.67
Development of social skills	4.05	.82
State park success in provision of benefits		
Quality time w/family & friends	4.52	.54
Physical health	4.25	.68
Nature exploration & discovery	4.38	.64
Mental health	4.19	.70
Development of social skills	3.90	.83

Parents' Outdoor Preference and Perception and Children's Outdoor Participation

In order to further examine if parent's personal outdoor recreation preference varies with their family participation in outdoor recreation, use of state parks, and the importance of their child participating in various outdoor activities, a chi-square analysis was performed. The chi-square analysis revealed that there is no statistical difference between parents' outdoor recreation preference (e.g., consumptive recreation, non-consumptive recreation, motorized recreation, or relaxing in nature) and their family's outdoor recreation involvement and park use (e.g., state park entrance license purchase, number of visits to state parks in the past 12 months). Chi-square analysis also revealed a statistical difference between parents or guardian's preference in outdoor recreation and the sense of importance for their children to participate in several outdoor activities (Table 4), such as shooting sports [X^2 (9) = 19.99, p = .02*], fishing [X^2 (9) = 22.71, p =

.01*], and hunting [X^2 (9) = 34.48, $p < .001$***]. Participants who prefer consumptive recreation activities place a higher importance for their children to participate in shooting sports, fishing, and hunting. However, no statistical differences were found between parents' outdoor recreation preference and their sense of importance of their child participating in camping, water sports, or land sports.

Table 4
Crosstab of Shooting, Fishing, Hunting and Parent Preference

Outdoor Recreation Preferences	Extremely unimportant	Unimportant	Neutral	Important	Extremely important
Shooting sports					
Consumptive	6%	6%	38%	41%	9%
Non-consumptive	4%	26%	39%	30%	0%
Motorized	14%	14%	29%	14%	29%
Relaxing in nature	0%	8%	67%	25%	0%
Fishing					
Consumptive	3%	0%	12%	56%	29%
Non-consumptive	2%	4%	41%	50%	2%
Motorized	0%	0%	29%	43%	29%
Relaxing in nature	0%	0%	50%	50%	0%
Hunting					
Consumptive	6%	6%	18%	35%	35%
Non-consumptive	2%	22%	52%	24%	0%
Motorized	14%	0%	29%	29%	29%
Relaxing in nature	0%	0%	75%	25%	0%

Chi-square analysis was also used to analyze whether the physical activity level of parents and children differed based on the parent's preference in outdoor recreation, including consumptive activities, non-consumptive activities, motorized activities, or

relaxing in nature. Results of the chi-square analysis showed that no matter what preference the parents had, their physical activity levels were the same and did not differ based on preference. Results for children varied from the parents and indicated that parent's preference in outdoor recreation activities showed a difference compared to their children's physical activity level [X^2 (6) = 18.32, p = .005**]. Participants who preferred relaxing in nature had children with significantly lower levels of moderate to vigorous physical activity levels (33%) when compared to other groups of children with different preferred recreation activities including consumptive (64%), non-consumptive (59%), and motorized (86%) (Table 5).

Table 5
Crosstab of Parent Preference and Activity Levels of Children

Outdoor Recreation Preferences	No participation	Moderate < 150 minutes	Moderate > 150 minutes
Consumptive	0%	36%	64%
Non-consumptive	2%	39%	59%
Motorized	0%	14%	86%
Relaxing in nature	25%	42%	33%

Chi-square analysis results indicated quality time with family and friends, physical health benefits, mental health benefits, and development of social skills are state park benefits that are perceived equally by parents or guardians regardless of their preferred outdoor recreation activities. The perceived benefit of nature exploration and discovery [X^2(6) = 14.51. p = .024*] was the only benefit to be statistically significant, showing a difference between parent's preferred outdoor activities and their agreement with this benefit being associated with their state park visitation. About 71% of participants who preferred motorized outdoor recreation opportunities showed an

agreement (agree and strongly agree) towards the perceived benefit of nature exploration and discovery, which is significantly lower than other groups of participants; consumptive (97%), non-consumptive (97%), and relaxing (92%) (Table 6). The success in state parks providing the benefits of quality time with family and friends, nature exploration and discovery, mental health, physical health, and development of social skills were all perceived similarly amongst the preference groups of parents.

Table 6
Crosstab of Parent Preference with Benefits of State Park Visitation

Outdoor Recreation Preferences	Disagree/neutral	Agree	Strongly agree
Benefit - Nature exploration & discovery			
Consumptive	3%	41%	56%
Non-consumptive	2%	30%	67%
Motorized	29%	57%	14%
Relaxing	8%	50%	42%

To further understand if parents perceived different benefits for their children based on the outdoor activities they participated in a series t-tests was utilized. Outdoor activities families participated in were determined by parents selecting from a list of activities they usually do when at a state park. T-tests results indicated that there were no perceived differences in benefits between family's who did participate and who did not participate in several outdoor activities such as fishing, boating, golfing, hiking, wildlife watching, hunting, OHV/ATV/UTV's, snowboarding, tent camping, RV camping, and shooting sports. T-tests also revealed that families who visit nature centers perceive higher physical health benefits [$t(102) = 2.234$, $p = .028$*] than people who do not visit nature centers. The benefit of nature exploration/discovery had greater perceived benefits from families who participated in biking [$t(102) = 2.191$, $p = .031$*], visiting nature centers [$t(102) = 2.738$, $p = .007$**], visiting historic sites [$t(102) = 3.177$, $p = .002$**],

attending special events [$t(102) = 2.407$, $p = .018$*], picnicking [$t(102) = 2.191$, $p = .031$*], and attending educational programs [$t(102) = 2.573$, $p = .012$*] compared to families who did not participate in those activities. Mental health benefits were experienced by families who participated in swimming [$t(102) = 2.193$, $p = .031$*], visiting nature centers [$t(102) = 2.575$, $p = .011$*], visiting historic sites [$t(102) = 2.463$, $p = .015$*], attending educational programs [$t(102) = 3.042$, $p = .003$**], and using electronic devices outdoors [$t(102) = 2.064$, $p = .042$*]. Finally, t-tests showed a higher perceived benefit of development of social skills being associated with families who participated in swimming [$t(102) = 2.293$, $p = .024$*], biking [$t(102) = 2.061$, $p = .042$*], team sports [$t(102) = 2.105$, $p = .038$*], playing lawn games [$t(102) = 2.246$, p = .027*], and attending educational programs [$t(102) = 2.069$, $p = .041$*] while non-participants in these activities did not have the same perceived benefits. Quality time with family and friends is the only benefit perceived the same between families who do participate and families who do not participate in any of the activities.

Table 7
Significant Differences between Perceived Benefits and Activities Participated In

Benefit	Activity	Participation[1]	Mean	SD	p-value
Physical health					
	Nature center	Yes, n=52	4.52	.54	.03*
		No, n=52	4.23	.76	
Nature exploration/discovery					
	Biking	Yes, n=53	4.64	.48	.03*
		No, n=51	4.39	.67	
	Nature center	Yes, n=52	4.67	.47	<.01**
		No, n=52	4.37	.66	
	Historic sites	Yes, n=46	4.72	.46	<.01**
		No, n=58	4.36	.64	
	Special event	Yes, n=30	4.73	.45	.02*
		No, n=74	4.43	.62	
	Picnicking	Yes, n=80	4.59	.52	.03*
		No, n=24	4.29	.75	
	Educ. programs	Yes, n=38	4.71	.46	.01*
		No, n=66	4.41	.63	
Mental health					

	Swimming	Yes, n=75	4.52	.67	.03*
		No, n=29	4.21	.62	
	Nature center	Yes, n=52	4.60	.53	.01*
		No, n=52	4.27	.74	
	Historic sites	Yes, n=46	4.61	.58	.02*
		No, n=58	4.29	.70	
	Educ. programs	Yes, n=38	4.68	.53	<.01**
		No, n=66	4.29	.70	
	Electronics	Yes, n=18	4.72	.46	.04*
		No, n=86	4.37	.69	
Development of social skills					
	Swimming	Yes, n=75	4.16	.79	.02*
		No, n=29	3.76	.83	
	Biking	Yes, n=53	4.21	.74	.04*
		No, n=51	3.88	.86	
	Team sports	Yes, n=28	4.32	.67	.04*
		No, n=76	3.95	.85	
	Lawn games	Yes, n=63	4.19	.74	.03*
		No, n=41	3.83	.89	
	Educ. programs	Yes, n=38	4.26	.80	.04*
		No, n=66	3.92	.81	

[1]Y= "Yes – family did participate in activity"; N= "No – family did not participate in activity"
*$p < .05$, **$p < .01$, ***$p < .001$

For further insight on if there was a difference between parents/guardians perceived benefits of children visiting state parks and the performance of state parks in providing those benefits a paired t-test was ran. Results of the paired t-tests showed that each of the five benefits quality time with family/friends [$t(103) = 3.087$, $p = .003$**], physical health [$t(103) = 2.175$, $p = .032$*], nature exploration/nature discovery [$t(103) = 2.529$, $p = .013$*], mental health [$t(103) = 4.621$, $p = <.001$***], and development of social skills [$t(103) = 2.395$, $p = .018$*] had a statistically significant difference between the benefit perceptions of parents and the benefit delivery from state parks. In all five benefits, parents/guardians had higher perceptions of the benefits their child could gain from participating in outdoor recreation compared to how well they believed state parks were at providing those benefits during their visits. The largest gap between perceived

benefits of parents and the performance of state parks was seen in the mental health benefit (Table 8).

Table 8
Difference between Parents Perceived and Gained Benefits of Visiting State Parks

Outdoor Recreation Benefits	Perceived	Performed	p-value
Quality time with friends/family			
	M = 4.70	*M* = 4.52	<.01**
	SD = .60	SD = .54	
Physical health			
	M = 4.38	*M* = 4.25	.03*
	SD = .67	SD = .68	
Nature exploration/discovery			
	M = 4.52	*M* = 4.38	.01*
	SD = .67	SD = .64	
Mental health			
	M = 4.43	*M* = 4.19	<.001***
	SD = .67	SD = .70	
Development of social skills			
	M = 4.05	*M* = 3.90	.02*
	SD = .82	SD = .83	

*$p < .05$, **$p < .01$, ***$p < .001$

DISCUSSION

The outdoors is a place for families to explore, be physically active, and participate in various outdoor recreation activities. Parents play an important role in their child's outdoor recreation habits by influencing them through their own likes and perceptions. The current study assessed a youth-focused outdoor recreation program to analyze the outdoor recreation patterns of families and the relationship between parents and their children's outdoor recreation participation. Furthermore, this study is framed using the ecological model which highlights the interconnected levels of interaction of an individual that have an overall effect on their development and tendencies (Bronfenbrenner, 1977; Larson et al., 2014). Outdoor recreation providers can use this study to better understand the outdoor recreation habits and desires of families.

Youth-focused Program for Promoting Outdoor Recreation

After participating in the Go Forth program, about half of Go Forth participants are maintaining the amount of time they will spend outdoors in the following years, but a majority of respondents were satisfied with their experience and were likely to recommend the Go Forth program to their family and friends. A majority of parents' and guardians indicated their physical activity levels and their family's physical activity levels would stay the same after their program participation. About 20% of parents or guardians reported that their personal physical activity levels or their family's physical activity levels would increase. Survey respondents were previously aware of activities and resources available in state parks to be physically active upon their participation in the program. Based on these results, it is possible that participants were already avid outdoor users before partaking in the program so participation in the program would not greatly influence their already established outdoor recreation habits.

Families engage in a variety of activities when visiting state parks, with a few of the most popular activities being hiking, picnicking/outdoor cooking, and swimming. These popular outdoor activities are in line with a similar national study, the National Kids Survey, conducted by Larson et al (2011) which studied the patterns of children's outdoor time. Their study found the most common outdoor activities were using playgrounds, picnics/cookouts, and swimming. One major difference between these two studies is the activity of using electronic devices outdoors. The current study only had 17% of program participants using electronic devices outdoors, while Larson et al.'s (2011) national study respondents had 65% doing so. High electronic device use outdoors was also prevalent in a Georgia population study, in which 59% of state park users

indicated their use of electronics (Larson et al., 2013). In addition to the relatively minimal use of electronic devices outdoors, participants of the current study may have greater interests in the outdoors or a higher frequency of state park use than others in studies focusing on the general population of the nation or state. This could be due to the high popularity of nature-based activities like hunting and fishing in the state as South Dakota has the highest percentage of paid hunting license holders per capita at 24% (Drillinger, 2021) and the sixth highest percentage of paid fishing license holders per capita at 26% in the United States (Troyer, 2020).

The current study showed parents who participated in the youth-focused outdoor recreation program identifying quality time with family and friends as the most important benefit associated with their child using state parks, which is similar to Larson et al. (2013). The current study further concluded that regardless of parents outdoor recreation preferences, parents equally recognized the benefits of quality time with family and friends, physical health, mental health, and development of social skills of their children. The current study only showed differences seen in terms of the nature exploration and discovery benefit amongst parents, with families that engaged in motorized activities having slightly less agreement towards that benefit. These results may suggest that participants of motorized recreation activities have less awareness of environmental benefits of outdoor recreation participation compared to other groups of outdoor recreation participants. Berns and Simpson (2009), through a review of articles looking at outdoor recreation participation and environmental concern included research by Jackson (1986, 1987) whose findings loosely supported that people who prefer mechanized activities have lesser pro-environmental attitudes. Berns and Simpson (2009) further

expressed the ambiguous aspects of what types of outdoor recreation experiences are linked to environmental concern, showing the need for further research in this area.

Parental Influence on Children's Outdoor Recreation Participation

Parents influence their children in many ways and one of those influences can be seen through their child's outdoor recreation participation. A higher importance is placed on shooting sports, fishing, and hunting activities from parents who prefer consumptive recreation activities, while camping, water sports, and land sports all have the same importance regardless of preferred outdoor recreation type. The current study's results show non-consumptive outdoor recreation activities are more frequently participated in compared to consumptive outdoor recreation activities, with similar results being found in Larson et al. (2013) study. The results might explain that non-consumptive activities are accepted by or more accessible for more people to participate in than consumptive activities (e.g. fishing, hunting), which may require additional training or permits. Therefore, it also explains the lack of statistical significance difference in parents preferred outdoor recreation activities for non-consumptive activities, such as camping, water sports, and land sports.

Parents have suggested the importance of educational and learning activities by revealing the benefits associated with various activities in the study. For example, parents in the current study have associated attending educational programs with nature exploration and discovery benefits, mental health benefits, and development of social skills. Educational and learning activities, such as visiting nature centers and historic sites and attending educational programs, are not participated in by as many families compared to more common activities such as hiking, picnicking, swimming. Although

there may be differing perceived benefits associated with certain types of activities there is continuous evidence that parents do believe benefits are gained from children participating in outdoor recreation regardless of type of outdoor activity (Barnett & Weber, 2008; Larson et al., 2013)

Parental influence can act as a significant indicator of what outdoor activities their children participate in, with the level of support from parents significantly affecting the recreation patters of children later on in life (Larson et al., 2014). Not only can parents influence the type of activities their children participate in, but they can also influence how long their children are participating in physical activity. For example, the current study found parents who prefer relaxing outdoors tend to have children with less moderate to vigorous physical activity levels (33%) when compared to other outdoor recreation preferences; non-consumptive (59%), consumptive (64%), and motorized (86%).

Interestingly, parent's outdoor recreation activity preferences do not influence their own level of physical activity but do influence the physical activity levels of their children. Parents may have varying levels of influence on their child's outdoor recreation participation, such as a supporting role or an active role. Cleland et al. (2010) provides evidence that encouragement from parents to young girls to play outside is a significant predictor of girl's outdoor play time. This parental support is also evident in youth sports. Children have been seen having more enjoyment for their sport when their parents support their participation (Hoyle & Leff, 1997). Family participation in leisure activities can also increase family satisfaction and improve quality of family life (Zabriskie & McCormick, 2003). Program providers should focus outdoor recreation programming on

providing opportunities for parents and their children to recreate together as well as encourage continuous participation outside of program participation.

Parents perceptions of the benefits that their child can gain from participating in outdoor recreation areas is higher than the actual performance they believed they saw from state parks providing those benefits. This was seen in each benefit listed in the current study, including quality time with family and friends, physical health, nature exploration and discovery, mental health, and the development of social skills. The largest gap is seen in terms of the mental health benefit. Green spaces play an important role in the mental well-being of people, especially children (McCormick, 2017), meaning there is a critical responsibility of providers to ensure that people will receive that desired mental health benefit in the planning and programming of state parks. A gap between the perceived or desired benefits and the actual benefits of state parks has been recognized and suggests parks and recreation professionals to focus on programs and facilities that will enhance the quality of their services as well as promote healthy lifestyles (Liu et al., 2019).

Practical Implications

While this research has identified various relationships between a parent's preference in outdoor recreation and their child's outdoor recreation participation it is important to provide ways for outdoor recreation professionals to utilize this research to help better the programs and services they offer and meet the needs and wants of the public. Firstly, program participants showed their already established patterns and habits in the outdoors, indicating that program providers are in a position to find increasingly engaging ways for non-frequent users to participate in the program as well as encourage

further outdoor recreation participation after completing the program. To better understand this group of non-users or non-frequent users a separate survey could be designed and distributed for the families that could not recall their participation in the program. Questions could address topics such as why they do not participate in outdoor recreation, what are they looking for when visiting parks, and what factors act as barriers to their participation. Using this information, program providers can reflect on their current offerings and then tailor their programs to include this new group of park users. In order to encourage non-park users to visit park locations for the first time, park providers may have to offer unique programs such as art in the park where park visitors can do a craft or a movie in the park where people can bring a lawn chair or blanket to enjoy a movie at night. A partnership with the public library could be a beneficial way to promote these programs and reach families with children in the community.

As parents continue to associate various benefits with education-related outdoor activities (e.g. attending educational programs, visiting nature centers, etc.) there may be potential to increase programming in these areas to meet a new need or demand. Focus should be placed on promoting these educational activities which will help bring awareness to them in the chance park users do not know they are offered at the parks. Highlighting the benefits and uniqueness of the program may also draw in new participants as they are able to learn something new in addition to seeing what else the park has to offer. These educational programs could be offered through a partnership with schools or health agencies. For example, outdoor recreation agencies could partner with the school district to offer a field trip opportunity to visit the local nature center where

children can learn about the outdoors (e.g. animals, trees, insects, etc.) from a park specialist or nature leader.

Limitations

It is important to acknowledge the limitations that exist when analyzing the results of this research. First, this study had a small sample size and was limited geographically to participants of a program offered for youth in South Dakota. The preferences and habits of the current study's participants may not be representative of other families in varying geographic areas. Future studies could potentially take a longitudinal approach when conducting a similar survey as well. This study only surveyed parents of children participating in the study, presenting an opportunity to enhance the study by utilizing focus groups to receive input from both the parents and the children. Finally, program users participated in the program before the COVID-19 pandemic but took the survey at the beginning of the pandemic. The strain, hardships, and change people were facing may have been reflected in their answers, specifically the mental health piece of the survey and is an important factor to consider when analyzing the results.

CONCLUSION

This study's results indicated the varying outdoor recreation preferences of families involved in a youth-focused outdoor recreation program. A majority of participants preferred non-consumptive activities and frequently participated in hiking, picnicking/outdoor cooking, and swimming. Further analysis into the preferences of parents revealed that despite their outdoor recreation preferences (consumptive, non-consumptive, motorized, relaxing) parents perceive the benefits of outdoor recreation participation equally. An interesting finding is the importance of educational

opportunities when visiting state parks as parents perceive there to be multiple benefits to be associated with activities such as visiting nature centers, visiting historic sites, and attending educational programs. This suggests the need for further research into the educational components of state parks and what parents and their families would like to participate. Results of this program also indicate that participants in the program were already aware of outdoor recreation sources in the state, as well as already being active outdoor recreation participants. To further enhance this study, youth-focused program providers can focus on reaching out to non-frequent users to encourage the use and visitation of state parks with their families.

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APPENDIX A

Dear Friends,

Thank you for being part of South Dakota's health and nature movement as a *Go Fourth* program participant! We appreciate your participation and would like to hear from you regarding your experience and perceptions of using the partnership programs between South Dakota Game, Fish and Parks (GFP), Department of Health (DOH) and SDSU Extension. The results of the study are expected to guide future programs to engage people of all ages and abilities to improve health and connect to nature in South Dakota.

This survey will take roughly 10 minutes to complete fully. You must be 18 years of age or older to participate the survey. Please answer each question truthfully and completely. We know how valuable your time is and appreciate you making the effort to help us improve our service by completing the questionnaire. Also, you will have a chance to win one of twenty $50 Amazon gift cards by completing the survey.

There will be no risk anticipated from participating in the survey. We value your privacy. Your response will remain anonymous and completely confidential, and your participation in this study is strictly voluntary. Please notice that your IP addresses will be collected and the information you provide will be stored and backed up on password protected computers. The information you provide will be used strictly for understanding the public perspectives and not for any other purpose. Your confidentiality is only as secure as your equipment; no guarantees can be made regarding the interception of data sent via the Internet.

This project has been approved by the Institutional Review Board (IRB) of South Dakota State University (SDSU). Any questions regarding your rights as a research subject may be addressed to the SDSU Research Compliance Coordinator at (605) 688-6975 or SDSU.IRB@sdstate.edu.

Thank you for your participation.

Sincerely,

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Section I: Program participation

1. Did you or your family participate in Go Fourth program?
□ Yes, I or my family participated the program.
□ No, I did not participate the program but am interested to know more about the program (link)

2. Did you upgrade your one-day pass to an annual park entrance license?
□ Yes, I updated my one-day free pass to an annual license.
□ No, use my free pass for a day visit at a state park only.

3. How many adults and children were in your group the day you used the free pass?
_____ adults (18 years or older) _____children

4. How far did you travel from your home to visit a state park to participate in the program?
□ less than 5 miles □ 5-10 miles □ 11-20 miles □ 21-50 miles □ More than 50 miles

5. **Before participating in the program**, had you previously visited a state park in South Dakota? □ Yes □ No

6. If yes, how often have you visited South Dakota state parks in the past 12 months?
□ 1 time □ 2-5 times □ 6-10 times □ 11-20 times □ More than 20 times

7. If no, please tell us what the major barriers are preventing you from visiting state parks.
_____

8. **After participating in the program**, how much time will you or your family dedicate to participating in outdoor activities this next year?
□ Less □ Slightly less □ Same □ Slightly more □ More

9. How would you rate your overall experience with the *Go Fourth* program on a scale of 1-7?

Very Dissatisfied (1)	Dissatisfied (2)	Somewhat Dissatisfied (3)	Neutral (4)	Somewhat Satisfied (5)	Satisfied (6)	Very Satisfied (7)

10. How likely will you be to participate other similar programs in the near future?

Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Neutral (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)

11. How likely will you be to recommend the Go Fourth program to your friends and relatives?

Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Neutral (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)

Section II: State Park Use and Outdoor Recreation

Please tell us how often your family participated in outdoor recreation activities in the past 12 months.

12. Please select the statement that best describes your frequency of participation.
□ Two or more times per week □ About once per week □ About once or twice per month
□ Several times during the year □ Once or twice during the year
□ I used to participate in outdoor recreation previously but not in the past year
□ I never participate in outdoor recreation

13. Please select the statement that best describes your preference in outdoor recreation activities.
□ I am not interested in outdoor recreation
□ I prefer consumptive recreation activities (i.e. fishing, hunting etc.)
□ I prefer non-consumptive recreation activities (i.e. hiking, education programs etc.)
□ I prefer motorized recreation activities (i.e. ATV/ORV, motorized boating etc.)
□ I prefer just relaxing in the nature and not doing recreational activities
□ Other (Please specify _____)

14. Please check which activities your family usually does at a South Dakota state park/recreation area.
□ Swimming □ Fishing □ Boating (e.g. motorboat, kayak, canon etc.)
□ Golfing □ Hiking □ Biking □ Wildlife watching
□ Hunting □ OHV/ATV/UTV □ Snowboarding/skiing □ Tent camping
□ Team sports (e.g. softball, baseball, volleyball etc.) □ RV camping
□ Visiting nature center □ Visiting historic sites □ Attending special event
□ Playing lawn games □ Picnicking/outdoor cooking □ Attending educational programs
□ Playing shooting sports (e.g. archery etc.) □ Using electronic devices outdoors
□ None □ Other (Please specify _____)

15. Please select the statement that best describe your typical purchase of South Dakota state park annual entrance licenses.
□ I always purchase a state park annual entrance license
□ I purchased an annual park entrance license in 2018, but not in 2019

□ I purchased an annual park entrance license before, but am not interested in purchasing again
□ I utilized the Park Prescription annual pass discount during my visit
□ I am not interested in purchasing an annual park entrance license

Section III: Physical Activity

16. **During the last 7 days**, how many days did you and your children participate in moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and walking outdoors during your leisure time?
You (parents/guardians): _____ days per week
Your children on average: _____ days per week

17. Select the statement below that best describes **your current level of physical activity**.
□ I do not participate in regular physical activity and I have no immediate plans to start.
□ I do not participate in regular physical activity now but have been thinking about starting.
□ I do moderate to vigorous physical activity, but usually less than 150 minutes per week.
□ I do moderate to vigorous physical activity for 150 minutes or more per week and have been doing so for 6 months or less.
□ I do moderate to vigorous physical activity for 150 minutes or more per week and have been doing so for longer than the past 6 months.
□ Prefer not to answer.

18.1 Please select the statement below that best describes **your children's current level of physical activity**.
□ They do not participate in regular physical activity and I have no immediate plans to start.
□ They do not participate in regular physical activity now but have been thinking about starting.
□ They do moderate to vigorous physical activity, but usually less than 150 minutes per week.
□ They do moderate to vigorous physical activity for 150 minutes or more per week and have been doing so for 6 months or less.
□ They do moderate to vigorous physical activity for 150 minutes or more per week and have been doing so for longer than the past 6 months.
□ Prefer not to answer.

19. As a result of participating in the program, DO YOU engage in more physical activity each week?
□ Less □ Slightly less □ Same □ Slightly more □ More

20. After participating in the program, how DOES YOUR FAMILY'S amount of physical activity each week compare to before participation?

□ Less □ Slightly less □ Same □ Slightly more □ More

21. As a result of participating in the program selected at the beginning of this survey, are you more aware of the activities and resources available in state parks to be physically active?
□ Less □ Slightly less □ Same □ Slightly more □ More

Section IV: Outdoor Activity and Benefits

Below are the statements with which you may agree or disagree. Using the 1–5 scale or No response below, indicate your agreement with each item by select the appropriate number on the line following that item (1=extremely unimportant to 5=extremely important).

22. How important is it for your children to be involved in the following outdoor recreation activities?

	Extremely unimportant	Unimportant	Neutral	Important	Extremely unimportant	No response
Camping						
Water sports						
Shooting sports						
Fishing						
Hunting						
Archery						
Land sports (hiking, biking etc.)						

23. Benefits associated with child/youth visiting state parks

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Quality time with family/friends					
Physical health					
Nature exploration & discovery					
Mental health					
Development of social skills					

24. How **SUCCESSFUL** are state parks in providing each of the following benefits?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Quality time with family/friends					
Physical health					
Nature exploration & discovery					
Mental health					
Development of social skills					

Section V: About yourself

25. Your gender: □ Male □ Female

26. Your age group: □ Under 18 years old □ 18-24 years old □ 25-34 years old
□ 35-44 years old □ 45-54 years old □ 55-64 years old
□ 65-74 years old □ 75 years or older

27. Your residential zip code _____

28. Your highest level of education
□ Less than high school □ High school graduate □ Vocational/trade school certificate
□ Two-year college degree □ Four-year college degree □ Master's degree □ Doctorate degree

29. Your current occupation
□ Student □ Housework □ Full-time employed □ Part-time employed
□ Unemployed □ Retired □ Other (please specify_____)

30. Your total annual household income (all income earners in your household)
□ Under $25,000 □ $25,000-$49,999 □ $50,000-$74,999
□ $75,000-$99,999 □ $100,000 and above □ Prefer not to answer/Don't know

31. What is your marital status?
□ Single, never married □ Married or domestic partnership □ Prefer not to answer
□ Single, divorced or widowed
□ Other (please specify_____)

32. Your race

□ White □ Black or African American □ Native Hawaiian or other Pacific Islander
□ Asian □ America Indian or Alaska Native □ Two or more races

Thank you for taking time to complete the survey!

Please enter your email for an opportunity to win one of twenty $50 Amazon gift cards!
We will only use the email address to notify you if you win the drawing. Email address:
_____