

Rural, Low-Income Mothers' Use of Family-Based Nature Activities to Promote Family Health

Dina Izenstark
Ramona F. Oswald
Elizabeth G. Holman
Shawn N. Mendez

University of Illinois at Urbana-Champaign

Kimberly A. Greder
Iowa State University

Abstract

This study explores how rural, low-income mothers use family-based nature activities to promote the health of themselves and their families. Data were collected through in-person interviews with a sub-sample of mothers ($n = 85$) who participated in a larger multistate, mixed-methods longitudinal project. Grounded theory analysis techniques were used to depict the social process of how mothers engage in family-based nature activities to promote physical, psychological, and social health of each family member, as well as the health of the entire family within the context of rural poverty.

Keywords: *Grounded theory, ecological perspective, community, institution, policy*

Dina Izenstark is a doctoral candidate in the Department of Human Development and Family Studies at the University of Illinois at Urbana-Champaign. **Ramona F. Oswald** is a professor in the Department of Human Development and Family Studies at the University of Illinois at Urbana-Champaign. **Elizabeth G. Holman** is a doctoral candidate in the Department of Human Development and Family Studies at the University of Illinois at Urbana-Champaign. **Shawn N. Mendez** is a doctoral student in the Department of Human Development and Family Studies at the University of Illinois at Urbana-Champaign. **Kimberly A. Greder** is an associate professor in the Department of Human Development and Family Studies at Iowa State University. This study is based on data from the USDA Hatch funded Multi-State Project, "Interactions of Individual, Family, Community, and Policy Contexts on the Mental and Physical Health of Diverse Rural Low Income Families", known as NC1171 Rural Families Speak about Health. This work was supported by the USDA National Institute of Food and Agriculture, Hatch project 223327. Please send correspondence to Dina Izenstark, izenstar@illinois.edu.

Time spent in natural environments provides a rich context for promoting health and well-being. A growing body of research has confirmed that individuals' engagement with the natural environment can impact multiple aspects of health: physical (Humpel, Owen, & Leslie, 2002; Kaczynski & Henderson, 2007), psychological (e.g., Kaplan, 1995; Ulrich et al., 1991), and social (Ewert, Mitten, & Overholt, 2014). Although it is clear that exposure to nature can affect individuals' health, there is little empirical evidence describing how participation in family-based nature activities¹ (FBNA) can influence health promotion. Family relationships, however, play a significant role in leisure decisions (Shaw & Dawson, 2001), and nature-based activities often occur within the context of families (Outdoor Foundation, 2013). The present study helps understand how and why families participate in FBNA, the perceived individual and family health benefits of participation, and how the context of rural poverty impacts participation from the perspective of rural, low-income mothers.

Family leisure time is viewed as "one of the few experiences that bring family members together for any significant amount of time today" (Zabriskie & McCormick, 2001, p. 287). Scholarship highlights the importance of family leisure activities as an essential component of family relationships, and, more specifically, family leisure time can contribute to improved family functioning (Zabriskie & McCormick, 2001), family resilience (Hutchinson, Afifi, & Krause, 2007), and increased satisfaction with family life (Agate, Zabriskie, Agate, & Poff, 2009). However, few studies have considered the context of these experiences (Goodsell & Harris, 2011; Shaw & Dawson, 2001), especially among rural families (Hebblethwaite, 2014). Outdoor family leisure activities, however, have the potential to promote family cohesiveness more than other types of activities (Hawks, 1991); yet current research falls short of understanding why, and what this looks like in daily life.

Understanding the role of FBNA from the perspective of rural, low-income families is especially important because the public health and leisure research in the last few decades has largely focused on the health benefits of nature exposure for urban residents (see Wells & Evans, 2003). This growing body of literature has contributed to the current push in North America for increased access to nature in urban communities through efforts such as the "Cities Promoting Access to Nature"² Initiative (Minchak, 2014) and "Nature in the City" programs. However, there has been little research or practice focused on the health benefits of nature-based recreation among rural populations. Rural populations are more likely than urban residents to experience health disparities, especially in regards to chronic health conditions (e.g., obesity, diabetes; Bennett, Olatosi, & Probst, 2008; Eberhardt & Pamuk, 2004). Furthermore, socioeconomic status is linked to an increased risk of being affected by health disparities (Adler & Newman, 2002). Because access to green spaces can play a vital role in reducing health inequalities (Mitchell & Popham, 2008), it is important to study rural, low-income families' use of outdoor activities. The authors apply grounded theory analytic techniques to a secondary data set to explore how mothers living in rural settings with low household income promote their health and the health of their families by utilizing nature-based activities in their communities.

¹Family-based nature activities (FBNA) refers to "outdoor recreation (e.g., camping, fishing, hiking), utilization of natural environments (e.g., parks, gardens, backyard), and family vacations in natural areas (e.g., visiting a forest preserve, national park, beach) with two or more family members" (Izenstark & Ebata, in press). This definition specifically examines everyday family leisure experiences in nature that are planned, organized and implemented by the family and excludes organized outdoor recreational experiences, such as adventure programs and family nature camps.

²The Cities Promoting Access to Nature Initiative is a new three-year project organized by the National League of Cities (representing 19,000 municipalities) and Children & Nature Network to support children's access to and connections with nature in urban areas, especially among low-income, minority populations (Minchak, 2014).

Theoretical Perspective

Ecological Model

We used the ecological perspective as a starting point to posit the importance of FBNA in supporting individual and family health outcomes. Specifically, we employ McLeroy and colleagues' (1988) theoretical lens to highlight how individual and social environmental factors can influence rural mothers' health behaviors on five interrelated levels: intrapersonal level (e.g., knowledge, behaviors, and skills of mothers), interpersonal level (e.g., processes within families), institutional level (e.g., infrastructure that supports FBNA; public parks, walking tracks), community level (e.g., access to green space in rural areas), and public policy level (e.g., environmental and recreation policies). This theory brings special attention to how each of these levels intersect with one another to affect health behaviors, with an emphasis on how "changes in the social environment will produce changes in individuals, and that the support of individuals in the population is essential for implementing environmental changes" (McLeroy, Bibeau, Stecker, & Glanz, 1988, p. 351).

Ecological and socioecological models have been widely used to understand health promotion (e.g., Sallis & Owen, 2002; Stokols, Allen, & Bellingham, 1996) especially within specific places and spaces (Sallis et al., 2006). Past research has found that intrapersonal factors (e.g., knowledge, skills, and attitudes), the physical environment (access to recreation resources), and the social environment (social relationships) can play an interrelated role in influencing health behaviors (Sallis & Owen, 2002). However, few studies have examined how families participate in health promotion in daily life (Christensen, 2004), particularly within the context of participation in nature-based activities. Consideration of family-level interpersonal factors is a unique and needed perspective because families play a vital role in shaping long-term leisure decisions and behaviors (Shaw & Dawson, 2001). This manuscript expands the family leisure literature by highlighting the family processes of participation in FBNA and its role in health promotion from the perspective of the mother. Findings from the study illustrate the interactional relationship between the components that make-up FBNA (e.g., mothers, families, environment, and community) and how they intersect to promote the health needs of rural, low-income families.

Literature Review

There are three relevant themes that contextualize this study. First, outdoor leisure activities are uniquely beneficial to families. Second, rurality and poverty impact health. Finally, rural mothers greatly influence family leisure experiences.

Benefits of Outdoor Family Leisure Activities

Engagement in leisure and physical activities has been consistently associated with positive health, wellness, and improved overall quality of life (see Payne, Ainsworth, & Godbey, 2010). However, this growing body of evidence primarily applies to outcomes for individuals; less is known about the role of family leisure in health promotion.³ Findings from this study suggest that family leisure activities that occur in nature-based settings can serve as a viable tool for health promotion. Geoffrey Godbey (2010) asserts that "Leisure is always done for its own sake

³"Health promotion is the art and science of helping people to discover the synergies between their core passions and optimal health, and become motivated to strive for optimal health. Optimal health is a dynamic balance of physical, emotional, social, spiritual, and intellectual health. Lifestyle change can be facilitated through a combination of learning experiences that enhance awareness, increase motivation, build skills, and most importantly, through creating supportive environments that provide opportunities for positive health practices." (O'Donnell, 2009, p. IV).

—because one loves to do it ...The ideal is to find activities that are intrinsically worth doing which just happen to be healthy” (p. 42). From this perspective, the health benefits of leisure are secondary or unintended beneficial consequences. To the extent that family leisure is motivated by relational goals such as spending time together, then these activities may be intrinsically rewarding. Thus, family leisure can be an ideal context for health promotion because “people who find something they enjoy doing and find meaningful are far more likely to continue doing the activity, than someone who does it as a means to an end” (Payne & Orsega-Smith, 2010, p. 22). It is important to examine the role of family leisure in health promotion to better understand how it can serve as a potential health intervention.

Although few studies have explicitly examined the relationship between family leisure and health promotion, there has been an influx in family leisure research over the last few decades that has explored the relationship between family leisure involvement and family functioning (see Hornberger, Zabriskie, & Freeman, 2010). Yet much of the recent literature has utilized the Core and Balance Model of Family Functioning that groups all family leisure activities as either core or balance activities (Zabriskie & McCormick, 2001) and does not take context into consideration. The context in which family leisure activities occur can play an important role in the quality of interactions and benefits that families derive from their time together.

For example, in a systematic review of the family leisure literature, Hawks (1991) argued that outdoor family leisure activities have the potential to promote family cohesiveness more than other types of recreation activities. Furthermore, West and Merriam (1970) found that outdoor family leisure activities were a unique context for improved family cohesion. The authors argued that outdoor activities are unique in that they intensify family interactions because they are often spontaneous, isolated (from the normal social world), ritualized, and the whole family tends to participate in the outdoor activity together. Similarly, Izenstark and Ebata (in press) theorized that FBNA have the potential to improve family functioning and uniquely benefit families more than other leisure activities. Integrating attention restoration theory (ART) and a family routines and rituals framework, the authors argued that the benefits of nature participation achieved through ART (e.g., mentally restored; thus, less irritable and able to pick up on social cues more readily; Kaplan, 1995) is a valuable resource for executive functioning and self-regulation (Kaplan & Berman, 2010) and can impact the quality of interactions with other family members (i.e., mental and emotional resources impact parents' reactions to their children; Dix, 1991). Conversely, other types of leisure activities (e.g. watching television, going to an amusement park) may increase mental fatigue that can lead to feelings of irritability (Kubey & Csikszentmihalyi, 2002), anxiety, and lower life satisfaction (Frey, Benesch, & Stutzer, 2007), and thus can negatively influence family interactions.

The majority of research on the benefits of outdoor family leisure has primarily focused on therapeutic and adventure challenge programs (Bandoroff & Scherer, 1994; Gillis & Gass, 1993; Huff, Widmer, McCoyim & Hill, 2003), and is not well represented in peer-reviewed journals. Although organized outdoors experiences have been found to contribute to improved family outcomes (Bandoroff & Scherer, 1994; Gillis & Gass, 1993), no study has ever examined how and why rural families utilize FBNA in daily life. The low-cost, publicly provided aspects of this form of leisure may be particularly relevant to families living in rural poverty.

Rurality and Poverty in Leisure Research

Although more than 59 million Americans reside in rural areas across the United States (US Census Bureau, 2010), little research has focused on family leisure in rural North America (Trussell & Shaw, 2009). This lack of attention may be due to an assumption that living in rural settings

provides ample opportunities and access to outdoor recreation. Edwards and Matarrita-Cascante's (2011) systematic review of the literature on rurality in leisure research found discrepancies in the literature on access to and opportunities for outdoor recreation in rural populations. On one hand, a body of research suggests that living in a rural area is associated with greater access to natural resources and open spaces, and thus a higher frequency of participation in outdoor recreation (Hendee, 1969; Johnson, Bowker, English, & Worthen, 1998; Warnick, 2002). On the other hand, recent research highlights that rural populations experience increased constraints in accessing publicly available recreation resources; thus, rural populations actually have fewer leisure opportunities compared to urban populations (Anderson & Heyne, 2000; Mowen, Payne, Orsega-Smith, & Godbey, 2009). This divide sheds light on the need to further examine and recognize "the complex and contextual conditions of different rural settings" (Edwards & Matarrita-Cascante, 2011, p. 450). For instance, a rural family living on a mountain in Montana and a family living in a trailer park in central Illinois would both be considered 'rural,' but the availability of leisure opportunities may be different.

Given these unique differences between rural families, we draw from other family leisure scholars (Hebblethwaite, 2014; Trussell & Shaw, 2009) to define rurality as a subjective and socially constructed phenomenon (Rye, 2006) informed by various meanings and understandings (Valentine, 1997) that shape social relationships in daily life (Little, Panelli, & Kraack, 2005). This definition is broad to explore "...ways in which different beliefs about rural life influence the meanings and experiences associated with family leisure, and indicates the importance of taking different perspectives into account" (Trussell & Shaw, 2009, p. 436).

Rural Mothers' Influence on Family Leisure

Research investigating rural family leisure experiences is sparse (Trussell & Shaw, 2009). The empirical evidence of mother-specific rural family leisure experiences is based primarily on work and leisure for farm women (Henderson & Rannells, 1988; Trussell & Shaw, 2007, 2009). However, these family leisure experiences are unique (i.e., farm mothers utilize leisure as a medium to maintain rural heritage; Trussell & Shaw, 2009); and do not reflect how rural, low-income mothers from the general population utilize family leisure. Only one extensive qualitative study exists that examined how rural, low-income mothers of young children utilized family leisure to have fun (Churchill et al., 2007). The authors found that rural low-income families had reduced opportunities for family fun due to living in the context of rurality (e.g., no public transportation, few leisure opportunities within walking distance) and poverty (e.g., little discretionary income, lack of transportation). This finding illustrates how rurality and poverty may engender additional barriers to participation in leisure activities.

Understanding FBNA from the perspective of mothers can be especially informative because mothers value and place high importance on family leisure activities (Trussell & Shaw, 2007). For instance, Shaw and Dawson (2010) examined the meaning of family leisure activities for parents of 10- to 12-year-olds and found that while both mothers and fathers equally viewed family leisure activities as purposive with the desired goal of enhancing family functioning and their children's health, in practice, mothers often spent more time than fathers planning, organizing, and engaging in family activities. Furthermore, research has also shown that mothers were also more likely to take on the organizational work for family leisure activities (e.g., Shaw & Dawson, 2001) and put family leisure before their own personal leisure pursuits (Shaw, 1992).

This study contributes to the larger body of family leisure research in several critical ways. First, it explores the meaning and experiences of a unique family leisure context—nature-based activities and their role in health promotion. Second, it examines the unique experiences of

rural, low-income mothers' accounts of FBNA to better understand their use of natural environments to promote the health of themselves and their families. Finally, this study investigates FBNA from the perspectives of rural low-income mothers, an under-represented voice in the current rural leisure literature (Edwards & Matarrita-Cascante, 2011).

Research Questions

To examine more closely the social processes of how rural, low-income mothers used FBNA to promote health; the following research questions were explored:

1. How and why do rural, low-income mothers use the natural environment as a means for promoting health for themselves and their families?
2. What perceived health impact does engagement in family-based nature activities have on mothers and their families?
3. How does living in the context of rural poverty impact mothers' ability to utilize family-based nature activities to promote their and their families health?

Methods

Data for this study were collected in conjunction with the cooperative multi-state USDA Hatch funded research project NC1171 Interactions of Individual, Family, Community, and Policy Contexts on the Mental and Physical Health of Diverse Rural Low-Income Families (commonly known as "Rural Families Speak about Health"). Any land-grant institution could apply to participate. Therefore, states "self-selected" into the larger research project based on scholars' research interests. Data were collected from families who had household incomes at or below 185% of the federal poverty level and who lived in counties across 11 states⁴ that were classified as having an Urban Influence Code (UIC) of 5 or higher (Economic Research Service, 2003). The UICs classify nonmetropolitan counties not just on population density, but also the proximity to larger, metropolitan areas (Economic Research Service, 2003). A county with an UIC of 5 is defined as a nonmetropolitan county with a population below 20,000 people and adjacent to a metropolitan county. A county classified with an UIC of 7 is also a county that has less than 20,000 residents but is not adjacent to a metropolitan county. IRB approval was obtained by PIs in each state through their associated university.

Recruitment

Each state collected data as per the protocol developed by members of the multi-state research team that developed and implemented the study. Data were collected in two waves. Only data collected from Wave 2 were analyzed in this paper. However, Wave 1 methodology is described below to provide the context from which Wave 2 participants were recruited as part of the larger multi-state longitudinal study. In Wave 1, mothers were recruited using advertisements posted throughout the community (e.g. flyers posted in the local Department of Human Services office or the local library). Screening procedures verified that participants were women who were 18 years of age or older, served as the primary caregiver for at least one child aged 12 or younger, resided in a rural county (as defined by a UIC of 5 or higher; Economic Research Service, 2003), and whose household income was at or below 185% of the federal poverty level. Trained interviewers conducted in-person computer-assisted interviews with 444 mothers

⁴Participants resided in the following 11 states: California, Hawaii, Illinois, Iowa, Kentucky, Massachusetts, Minnesota, New Hampshire, Tennessee, Texas, and Washington.

across the 11 states. Information regarding mother's health, child's health, access to healthcare, financial security, and other demographic information was collected. Participants were compensated \$30 for their participation in Wave 1.

The 85 mothers for this study were purposively selected from the larger sample of 444 mothers who participated in Wave 1 of RFSH and who represented a continuum body of mass index level (i.e., normal weight, overweight, obese) and a continuum of how they rated their health and their children's health (i.e., excellent, very good, good, fair, poor). Thus, theoretical sampling of mothers for this study was based on achieving diversity in mothers' and children's health status. Informational letters were mailed and/or phone calls were made to the selected subset of mothers inviting them to participate in a follow-up interview.

Participants

The majority of mothers ($n = 85$) in this study identified as Caucasian (78.5%), followed by American Indian (6.3%), African-American (5.1%), Pacific Islander (3.8%), and Asian (2.5%). One-fifth (20.3%) of the mothers identified as Latina. Mothers ranged in age from 19 to 59 years at the time of the Wave 1 interview ($M = 33.67$, $SD = 8.31$), and nearly half (45.6%) of the mothers were married. Mothers on average had 1.98 children, ranging from one to five. A little over 32% of the mothers were employed, of which 42% were working over 35 hours per week. The median annual household income of the mothers was \$15,000-\$19,999.

Procedure

Wave 2 data collection consisted of in-depth semi-structured interviews conducted by trained interviewers. Interviews took place in mothers' homes or at a location that was convenient and comfortable for the mothers and ensured privacy. Interviews took on average one and a half hours to complete, and mothers were offered an honorarium ranging from \$30 to \$40 based on the funding available for the study in each state.

Mothers were asked about various aspects of their health and their child's health. Questions included: "What is the most important thing you and your child do to stay healthy?" and "What resources in the community support your health?" Although mothers were not asked directly about their use of FBNA, nearly every mother discussed spending time in nature as an activity used to maintain their family's health. Mothers' narratives were then analyzed in MAXQDA 11 software (2014) to explore how and why they used FBNA to support their families' health.

Data analysis. Although grounded theory methods urge the concurrent collection and analysis of data (Charmaz, 2006), this was not possible due to the use of existing data for this study. Within the parameters of this limitation, data were analyzed using grounded theory coding techniques and resulted in a mid-range substantive theory of how FBNA is enabled and constrained by rurality and poverty and leads to perceived health benefits. Data analysis was performed by the first and second authors. At all steps, they worked independently and then met weekly to compare their work; all disagreements were resolved through discussion. The other authors were familiar with the larger project from which this study is derived, and they participated in all coding discussions as well as manuscript drafting.

To begin, the coders oriented themselves to the overall narratives provided by each mother by reading multiple transcripts in their entirety. Once familiar with the general narrative structure of the data, they identified all data relevant to the research questions by using the search function in MAXQDA to find all words that referenced the natural environment (e.g., park, outdoors, beach). Data using these words was then delimited by narrative—entire stories in which these words appeared were coded so that the researchers could observe not only the reported behaviors but also the meaning statements that mothers attached to those behaviors (Riessman,

1993). Narratives about using the natural environment were then coded on whether or not the experience was a FNBA. To be an FNBA, the activity had to involve at least two family members and take place in the natural environment.

Once the FBNA data were captured, the coders used Corbin and Strauss' (2008) analytic tools to identify "who, what, when, where, why, and how" families utilized nature to promote health—a summary sheet was created for every participant. The authors then used the ecological model as a guiding theoretical framework to identify the individual, social, and environmental determinants of behavior within the summary sheets and began to analyze how each of the levels were interrelated. Next, constant comparative methods were employed to compare similarities and differences across the interviews (Glaser & Strauss, 1967), and then new, more focused codes were developed. Axial coding was then used to relate categories to subcategories and specify associated properties and dimensions (Strauss & Corbin, 1990), followed by theoretical coding to explain the relationship between concepts and to use the data as evidence of the proposed theoretical model. As the coding, categories, and concepts were further refined, the authors used sensitizing constructs from the ecological model to further inform the analysis. Analyzing the data was an iterative process that consisted of moving back and forth between these processes as the substantive theoretical model was further developed.

Results

Summary of Research Findings

The research findings of this study depict the process of how low-income mothers living in rural areas maintain the health of themselves and their families by utilizing the natural environment in their community. Mothers described a desire to keep their family healthy by engaging in FBNA that predominately included walking outside, going to parks, and ritualized family experiences in nature. Being a good role model for their children, limiting TV exposure, and the desire to promote healthy development were three primary reasons why mothers encouraged FBNA. Mothers reflected on how they engaged in FBNA to promote physical, psychological, and social health benefits of each family member, as well as the health of the family unit. However, living in the context of rural poverty impacted mothers' ability to spend time outdoors with their family. Specifically, geographic location, access to free, public recreational opportunities, and their individual unique family resources impacted the frequency of time they spent outdoors. These findings are discussed and applied to the ecological model in the following sections to highlight the dynamic relationship between individual and social environmental factors and how they intersect to influence health behaviors.

How Low-Income, Rural Mothers Use Nature to Promote Health

In this study, mothers described using a variety of FBNA to promote the health of their families. However, walking in nature was the predominant activity mentioned. Mothers described how walking was an activity the whole family could do together regardless of the child's age or the family's financial constraints; many described easily accessible and free places to walk (e.g., park, school track, farm roads). Going to the park was the second most common activity reported by mothers as a strategy to promote health. In park settings, families engaged in exercise, free play, sports, picnics, parties, and watching free movies, among many other activities. Finally, owning a canine also influenced health promotion in nature. Mothers shared how it was common for multiple family members to walk the dog together, take the dog to the park, or play with them in the yard.

Although the majority of FBNA experiences described were day-to-day routinized activities, over half of the mothers also described reflective, ritualized FBNA experiences that the family annually anticipated as a means of stress reduction and family connection. Examples of these rituals include picking blackberries every summer, annual family camping trips, and staying on the beach while visiting extended family.

Why Low-Income, Rural Mothers Use Nature to Promote Health

Three main reasons mothers utilized FBNA for health promotion included: a desire to be a good role model, limit television exposure, and promote healthy development. For some mothers engaging in FBNA reflected a larger aspect of their nature-oriented family identity.

Being a good role model. Many mothers described how engagement in FBNA was an avenue to be a good role model of health for their child(ren). For instance, Hannah from California described how she and her husband struggled with weight issues growing up and were concerned about their child struggling in the same way. When Hannah was asked, “Where did you learn about the importance for her [daughter] to be physically active as well as yourself?” Hannah responded,

Well, my husband and I both struggled with weight issues growing up despite both of us being active. He did sports through school, I did sports through school and so we both have always been kind of concerned about our children struggling the same way, so I guess from personal experience we decided that it was really important for her to be active.

Hannah went on to explain how as a family they make it a priority to bring their daughter to the park on a regular basis to encourage an active lifestyle.

Mothers also expressed how spending time in nature was as important for them as it was for their children. For instance, Mindy from California explained how she makes it a priority for her kids to go outside and play, but often needed to remind herself to do the same.

I make sure that they’re doing healthy things and I’m like, ‘Oh good, they’re out of my hair, I’m going to go clean now.’ Well that’s not the healthiest thing for me to be doing. I should be outside with them, too. I should walk around the circle a couple of times and allow myself to do that.

This recognition, that spending time outdoors was beneficial for the whole family, was a common sentiment reported by mothers and motivated many of them to engage in FBNA.

Limiting television exposure. Mothers also expressed worry about the effects of TV on their child and often juxtaposed spending time outside (as a healthy activity) against their child being indoors watching TV (as an unhealthy activity). Mothers described how they purposefully limited the amount of TV their child could watch while simultaneously encouraging their child(ren) to spend more time outdoors as a way to promote health. Dana from Washington said,

When I was her age, I was running through the woods with the boys playing A-Team... I want her to be able to enjoy herself and not spend as much time as her friends sitting in front of the television and staring off into space. She’s getting more active [since we decreased the TV]; she’s going out and doing more... She’s beginning to make up her own plays and songs and things that she wasn’t really doing as much of before because she was relying on things she’d heard on television, and they were doing her, fantasizing for her as opposed to allowing her mind to do it.

Promoting healthy development. The majority of mothers also described the importance of getting children outdoors regularly to promote healthy child development and allow them to expend extra energy. Iris from Massachusetts summed up many of the mothers' rationale in stating, "I think one of the best ways to keep her [daughter] healthy, is getting her outside because there's so much outside."

Defining family identity as nature-oriented. A subsample of mothers reported that engagement in FBNA went beyond promoting health. These mothers expressed how spending time in nature was part of their daily life and a framework for their family identity. It was an activity the whole family did together as opposed to one or two members. Lydia from California explained, "If we go to the park, we all go to the park. We try to do things as much as we can together." Alta from Washington explained that FBNA is a priority in her family, stating, "I guess people can exercise separately, but I don't understand, like why can't the family do it together." In her family, Saturdays are reserved for family time "away from everything."

This subsample of mothers also displayed an appreciation for living in a rural setting given the ease of access to the natural environment. For instance, they explained how life for them was organized around nature "because that is what we do here" and "If you're into nature you're all set." They were also more likely to describe themselves as, "outside people" and even joke that "they can't be part of this family if they don't enjoy the water." These mothers also expressed an appreciation for living in a place surrounded by green space and for some, could not imagine living in an urban environment. Amparo from Iowa explained,

Something that helps me is the place where I live, the place, the town by itself because obviously there is not so much noise, there is no traffic. There is a lot of green space. The environment is an environment with clean air, so all this helps me to feel good. It is not like Chicago. We went to Chicago last week, and my husband was telling me, 'I want to go home, I will get crazy here,' and then you come here, and you say, 'how calm.'

Mothers who have incorporated nature into their family identity were also more likely to spend time outdoors year round. A few mothers described how living in a rural setting was a good place to raise children because it encouraged and supported their development of good values. Lydia from California explained,

Yeah, you know, I think it's helped him out here because I take him to the city and he just can't take the traffic or the stress of, 'get off the street,' so I think that here the children learn to value things that they don't have, you know what I mean? I think that they learn to grow up with working for things like that's what our family's been doing. Abel, he works with his dad so that has helped him to value what he has.

Application of the ecological model to how and why mothers use FBNA for health promotion draws attention to the interconnectedness and interdependence of the individual and environmental attributes that make-up the processes of using FBNA for health promotion. For example, mothers' knowledge, attitudes, and values about the importance of nature exposure and health promotion influenced them to get their children outside but in doing so they often realized that it was just as beneficial for them (intrapersonal factor). Additionally, a subgroup of mothers used nature as a way to foster family relationships that facilitated a nature-oriented family identity (interpersonal level). Achievement of these healthy behaviors within the individual and their families were manifested through engagement in a variety of nature-based activities (institutional factor) based on what was available to them in their community.

Perceived Health Outcomes of Using the Natural Environment

Physical, psychological, and social health benefits to individual family members were frequently reported by the mothers as an effect of their participation in FBNA. While the moms described the direct impact nature had on the health of individual family members, the data also suggest family-level benefits of engagement in FBNA.

Physical health. The benefits to physical health were the most cited outcomes of engagement in FBNA. Specifically, mothers described that regular engagement in FBNA allowed themselves and their family to remain active and maintain a healthy weight. For instance, Dolly from Washington shared that she was motivated to start spending more time with her family outside after her doctor raised concerns about her significant weight gain. She described how at that point, “My main incentive was to be able to play with the girls without getting tired.” Dolly described how she has since been training with her oldest daughter to run a 5k and now part of their family routine is to go to the nearby walking trail and run together. This mother has noticed drastic improvements in both her and her children’s physical health.

Psychological health. Although mothers were often drawn to engage in FBNA to promote their physical health, their accounts revealed a carryover effect in that they were able to identify even more immediate psychological benefits from their participation. For instance, Luz from Iowa shared how her partner started going to the school track to lose weight and improve his cholesterol. After some time, he invited Luz and now their whole family goes together. Luz recalled the psychological benefits of this experience, “...the truth is, he started going there not just to lose these pounds, but he wanted to feel good with himself and, it is not only to lose weight that you go for a walk or you run; it automatically highs [sic] your self-esteem.”

A desire to alleviate stress was another reason mothers indicated seeking out FBNA. For instance, Barb, a single mother who lives in a crowded subsidized housing unit with her two sons, described the stress of her living situation. When asked how she copes with the stress, she responded, “Usually I leave and me and the boys just go somewhere like to the river or the nature center or just walking around or something, you know what I mean...We go and do something. We just get away.” Using FBNA to decrease stress was a prevalent theme; mothers indicated that spending time outdoors was a way to “feel good” and reduce feelings of irritation, anger, boredom, and depression.

Several mothers also discussed the negative effects of video games as a reason for why they incorporate more outdoor activities in their family routines. For example, Annamae from New Hampshire explained how limiting video games and increasing time spent outside has helped her son:

...He [child] knows that video games affect him negatively and he says, ‘my eyes hurt and I’m just feeling really grumpy’ and he just knows that its part of the reason he’s not feeling well cause he can’t sit in front of the TV for hours on end...so we limited it at first, and then, he just stopped doing it so we took it out of the household. And it has done wonders for him in school and behaviorally.

Within the interview, Annamae explained how her family prioritizes spending time outside (four to five times a week in the summer) to stay healthy by going to the park, playground, and walking.

Social health. Additionally, mothers described how engagement in FBNA promoted social health. Particularly because they lived in rural settings where socialization with other children may have been limited, mothers felt that the social aspect of FBNA was an important benefit to their family’s health. For instance, Lucy in Illinois explained, “...I want her to have interaction

with other kids and she only has that on days we see people at the park or when she goes to Sunday school..." Similarly, Eve from Kentucky stated,

Yeah, I take her to the park all the time. She has three aunts by there so I'll call and say, 'Can we go to the park today?' I try to take her to the park ... And most of the time I just try to get friends to come up here and play with her. She hasn't really been around many children except school and where we live it's kind of hard.

A few mothers who homeschooled also shared how it was common to get the children together to go on walks in order to encourage socialization.

Family health outcomes. Finally, some mothers focused on family-level outcomes in addition to the individual-level benefits of FBNA. Specifically, the mothers who defined their family identity as "nature-oriented" stated that a primary purpose of engaging in FBNA was to promote family health. For instance, Amparo explained every weekend her family makes it a priority to go to the park and play sports and have dinner together. She went on to explain that these traditions feel good and help with family unity, stating "it's so important to preserve them." Similarly, Alta from Washington described how, "...every Saturday, we try and go to a picnic or a pony [ride], just to get away from everything, and just spend time with everyone."

Beyond routine use of FBNA, mothers also reported that the ritualization of FBNA was a way to promote positive family-level health outcomes. Family vacations in nature were emotionally exciting and anticipated because they allowed families to bond, interact in new and familiar ways, and to get away from the stressors of daily life. For instance, Arabella from Tennessee explained that while her family does not go on many vacations, every autumn they look forward to visiting her mother at the beach. She said,

This is our time to just unwind—whoever came up with that idea was a genius—just to give you a breather—the head start before you go to the holidays. It's just a nice break and we just relax. [My kids] can't wait; they already started talking about the beach, the beach, the beach (laughter) - cause we do nothing, we don't do any different amusement parks, we are getting up and we are just taking our time, we gather our stuff and go to the beach and we stay at the beach, it's real family oriented.

Although some mothers' accounts of their ritualized engagement with FBNA were not directly focused on the perceived benefits, data suggest that the natural environment played an important role in serving their needs. Particularly, mothers accessed nature with their families because it was affordable; elicited new, exciting, and adventurous elements; and offered feelings of fun, relaxation, and being away (despite some FBNA experiences taking place close to home). Additionally, aspects of positive family functioning were evident in their testimonies as they described past experiences. For example, statements such as "we had so much fun" or "my daughters laugh so much when we are at the playground" or "you've got to build memories for the kids to have fun" suggest that engagement in FBNA can contribute both directly and indirectly to family-level health outcomes.

Examination of the perceived health and family benefits associated with engagement in FBNA interrelates with the ecological model in unique ways. First, our findings show how behavior change can be initiated by a variety of different social relationships (e.g., doctors, partners, and children) within the interpersonal level. Participants who were successful in implementing health behavior changes (e.g., lose weight, reduce cholesterol) included their family in the process to increase their motivation. In doing this, they were able to utilize their family as support and focus less on the extrinsic goal of a physical health change and more on intrinsic family

relationship goals. This shift in focus allowed them to not only achieve individual health benefits but to promote positive family-level outcomes as well. These changes were implemented through participation in nature-based recreation opportunities (institutional and community level).

The Impact of Rurality and Poverty on Mothers' Ability to Utilize FBNA

The intervening conditions that affected mothers' participation in health-promoting FBNA within the context of rurality and poverty were also examined. Specifically, mothers discussed how geographic region, housing location, availability of nature-based activities, weather, cost, and unique family resources influenced their frequency of engagement in FBNA.

Rurality

Geographic region. Mothers' accounts of FBNA varied greatly based on the geographic region of the state in which they lived as each had different physical natural features (e.g., lakes, mountains, cornfields, beaches) that varied the opportunities of FBNA available to families. Thus, mothers in different rural geographic regions described different types of FBNA ranging from going to the beach in Hawaii, berry picking in Washington, and using the public school walking track in Iowa. Reports of constraints on time spent outdoors due to seasonal restrictions in some geographic regions were also raised. Specifically, it was common for families to spend less time outside during harvesting, hunting, or mud season based on their geographic location.

Housing location in combination with geographic region also impacted a family's proximity and access to natural spaces. Families who lived on farms, for example, had different nature opportunities compared to families living in apartments, trailer parks, or hotels. Despite living in a rural setting, some mothers expressed having little green space outside their home. Ruth from California, who lived in a trailer park, explained that the only green space outside her home was a small park for her daughter. They used it regularly because of its convenience, but Ruth felt it was in poor condition and voiced a desire for access to other types of nature opportunities. Similarly, Barb was living in a low-income apartment complex in Illinois with access to a small park. However, she did not feel comfortable allowing her children to go outside to play because she perceived the residential community to be unsafe. She recalled,

I was just ready to pull my hair out because they [her sons] would say, 'I wanna play outside, I wanna go outside' but I was too afraid something would happen to them with all the stuff, [the drug dealing] that was out there.

Difficult terrain also limited mother's ability to utilize FBNA. For instance, Daphne from California's home location restricted her activities, she explained, "There are so many hills, I don't want to go up a hill on a bike; it's just no fun."

For other mothers, the location of their family's home facilitated easier access to nature. Valeria, who lives on a farm in Washington explained, "I've got... acres of farm roads to wander on, and when the weather is nice, we'll take the dog and [child] and I will go out and walk." Phoebe from New Hampshire, who lives on a mountain side, discussed how her home is tiny but idyllically located. She said, "I like where I live because there's a mountain out back and we can sit on the back deck and the rivers flowing and we are high enough up that we don't have to worry about flooding." FBNA varied tremendously based on the surrounding geographic region and the accessibility to nature outside their front door.

Weather. Similarly, weather played a major role in constraining or facilitating mothers' abilities to take their families outside. Throughout the interviews, the phrase "When it's warm..." was omnipresent as many mothers completed the sentence with actions such as, "We go outside" or "We go for walks." During the summer months, most mothers reported that their families

spent more time outdoors. Families who lived in geographic regions with a harsh winter season especially reported that they were more sedentary when it was cold outside. Phoebe from New Hampshire described this best:

...wintertime is my hardest time to get the kids active and stuff because it is so cold outside. You don't want to bring them out when it is 10 below 0, you know, so I just try to look up online if there are any activities in the house that we can do, we usually bring a kick ball in and we will kick ball around the house. It's probably not the safest and smartest thing to teach kids but at least it gets them active...In the summertime, I have no problems, we can do like walking and hiking and stuff like that.

Several participants reported that it was difficult to find ways to stay healthy during the winter season. Many mothers expressed how they wished there were more free indoor activities for their family during the cold season. This inactivity caused some women to feel "more depressed" and "stir-crazy" throughout the winter months.

Availability of nature-based recreation opportunities. Although mothers' experiences of nature differed based on their geographic region, all of the mothers described the importance of publically available nature-based recreation opportunities. Easy access to nature-based recreation resources from one's home was an essential ingredient needed to regularly engage in health promoting FBNA. Mothers who had access expressed an appreciation for how easy it was to take advantage of nature. For instance, Hannah from California stated,

There's so much to do here recreationally. The national forest, our state parks, lakes, I mean you can go just about anywhere here and enjoy yourself while getting exercise. So I think that we're really lucky to be in such an easy place to exercise.

Similarly, Sophie from Massachusetts explained her appreciation for a new paved bike trail that was recently built near her home and how it increased the amount her family engaged in FBNA,

I'm so happy that they made this trail...it's a paved bike trail, perfectly safe because we're not gonna bring all of our kids on this road and die, even walking the sidewalks is difficult because there's cars and stuff, so the bike trail, it's been awesome.

Furthermore, mothers discussed how nature outside their home (e.g., woods, a forest or backyard) was important for their children to play together but they also needed nearby nature-based recreation opportunities (parks, walking trails, nature centers) to support FBNA. Many mothers felt these settings better met the needs of the entire family. Sophie recalled,

I guess the only thing [that prevents me and my family from being healthy] is just not [having] access to being able to go for walks from our house, having to drive to go for walks, having to drive to go to the park. [The interviewer responded, 'You're surrounded by woods, and you live on a hill, right? What makes it difficult for you and your children to play around the wooded areas?'] They [children] play a lot, I think because there [wooded areas] it makes it more fun, there's always something for them to do. I think that the woods make it more fun for a kid, but as far as doing stuff as a family, not being able to leave our house and go for a walk [is difficult].

Conversely, lack of publicly available opportunities limited FBNA. Ruth in California said,

We live in a trailer park, kind of small community. There is not much of anything for children to do in that community; it's not really welcoming. I mean you're not allowed to skateboard there or there's no little park area where the kids can play ball without

getting in trouble for it so I mean that requires [us] to go outside of our immediate community if we want to go do something like that.

Ruth further explained the difficulty she experienced in utilizing FBNA outside of her community because financial constraints limited her family's ability to travel.

Poverty. Thus, the context of poverty also greatly influenced mothers' ability to engage in FBNA. Specifically, cost and family resources played a vital role in the frequency of engagement in health-promoting FBNA.

Cost effective. The overarching context of poverty was evident in the mothers' testimonies as they described cost effectiveness as one of the main motivations for engaging in FBNA to stay healthy. Roxanne from Texas explained, "We try to take advantage of the places that are public; our income is limited, so if there is something free going on, we will go to that." Many of the mothers discussed giving up membership to a gym or YMCA because a change in their economic situation made it too expensive to maintain. These mothers turned to nature-based opportunities to exercise as a more cost-effective option. Lissa from Massachusetts said, "Before the money got too tight, I used to go to the YMCA...but I can't do that anymore because I don't have the money, so I just walk around town with my kids when it's warm." Similarly, mothers indicated how they were unable to afford organized, recreational opportunities for their children—especially with more than one child in the family. Given a limited income, even low-cost programs were often too expensive. Caroline from New Hampshire recalled,

I had to pay \$22 for 8 classes....Which isn't a bad cost if you think about it, 8 classes for \$22. But when you are on a fixed income it does, we would have to pay \$44 for both the boys now [I] can't really afford that. So I would say that would be my only downfall for the community. The only good thing about it that they do have sidewalks in town. You can go for walks and they have parks, community parks, and they have the community swimming pool.

In many cases, mothers described how they were unable to afford commercialized recreational activities for their entire family. A shared experience among many participants was to use the public lake, as opposed to the community pool, because it was free. Mothers living in poverty expressed limitations in their choices of FBNA due to their financial situation. Therefore, they utilized what was available to them: nature.

Family resources. The frequency with which mothers reported engaging in FBNA was also influenced by their own unique family resources, specifically in regards to the proximity of extended kin and whether the mother lived with a partner. The geographic proximity of extended kin appears to increase social capital in two main ways. First, having more family members living nearby increased the social network of people to engage in FBNA with; mothers reported nightly walks with a sister-in-law or weekend gatherings outside at a grandparent's house. Second, mothers with nearby family described access to more natural spaces. A common theme was to utilize relatives' natural spaces, both for novelty and when they did not have direct access to natural spaces from their own home. For instance, when Lucy from Illinois was asked where she goes to access healthy community places, she explained, "[My daughter] likes to go swimming and my dad lives in town and he's got a little kiddie pool for her, he's got a big backyard, has a sprinkler and we go outside and play."

The analysis also suggests mothers who were married or had a partner in the home spent more time in FBNA with their children. We identified three ways partners served as a source of capital for these women. First, mothers felt safer in natural spaces with a partner compared to

taking the children alone. Second, in many cases, the partner initiated or encouraged the family outing. Finally, mothers indicated their partner shared a role in taking the children outside, highlighted how sometimes the whole family would spend time outdoors and other times just her children and partner would spend time together outdoors.

The influence of rurality and poverty on mothers' engagement in FBNA provides a deeper understanding of the intersection between the intrapersonal, interpersonal, institutional and community factors within the ecological model. Our analysis shows how mothers had the knowledge, attitudes, and skills to utilize FBNA for health promotion, but participation was facilitated and/or restricted based on one's access to cost-effective, nature-based recreation opportunities close to their home. These interrelated variables highlight how each of these levels of analysis impact health related behaviors and the potential health outcomes of the family.

Discussion and Conclusion

The current study explored the FBNA of rural, low-income mothers as a unique context for health promotion. Embedded within an ecological framework, findings from this analysis show that engagement in FBNA plays a significant role in the mothers' lives by serving as a vehicle to provide individual and family health benefits.

Application of Ecological Model

The results of this study broaden the family leisure literature by illustrating how FBNA can be utilized as a vital form of health promotion; emphasizing the interactional relationship between mothers, families, the environment, and community. Specifically, the findings highlight how mothers knowledge, attitudes, and skills (i.e., to be a good role model, to limit television exposure, and promote healthy development) influence their desire to keep their family members and themselves healthy. To achieve these short and long-term goals mothers facilitated FBNA to promote individual (physical, psychological, and social) and family (e.g., family identity, bonding, family functioning) health outcomes. However, within the context of rural poverty (community) participation in FBNA was either enhanced or constrained based on a family's access to free, nature-based recreation opportunities (environment). The results highlight the multiple levels of influence on health promotion behavior, and how all levels must be taken into account for families to achieve their goal of utilizing FBNA as a form of health promotion (Dustin, Bricker, & Schwab, 2010; McElroy et al., 1988).

Multi-faceted benefits of FBNA. Results of this study also highlight the multi-faceted benefits of FBNA. While some families were initially motivated to engage in FBNA for physical benefits, mothers reflected on how they often experienced more immediate psychological and social benefits from their participation. The context of nature is especially unique because of its benefits both as a setting and as an activity. From the environmental psychology literature we know that exposure to the natural environment (as a setting) facilitates multiple psychological benefits (see Children and Nature Network, 2014). However, this study shows how the context of nature is also important as an activity due to its "relational" composition in that it provides a context for families to bond, interact, and engage with one another away (both mentally and physically) from the stressors of daily life. This calls for future research to explore the added benefits of nature exposure both as a setting and an activity.

Furthermore, we found utilizing FBNA went beyond the health benefits for individual family members and also generated family-level health benefits. These findings echo previous family leisure studies that show time spent together is essential for family functioning and relationships

(Zabriskie & McCormick, 2001). Additionally, this work extends those findings by showing that within the context of nature, benefits may overlap between individual (e.g., improved weight, decreased stress) and family health promotion. Thus, engagement in FBNA may contribute to a higher quality of life for the entire family. This finding has important program implications that emphasize the need for more health promotion programs and spaces that are designed for the whole family. Results of this study can be used to advocate for updated marketing campaigns that encourage FBNA. In the same way, Burdette and Whitaker (2005) recommended revamping the language used (e.g., encourage “play” over “physical activity”) to encourage outdoor play for preschool-aged children, we too believe greater emphasis should be placed on encouraging “family togetherness” over “physical activity.” Practitioners should design marketing materials that encourage families to get outside and spend time with one another highlighting that there is something for everyone regardless of age. These approaches can recruit new types of participants who may be intimidated by exercise campaigns but feel encouraged to spend time outside with their family to build stronger relationships.

Context of rurality and poverty. Finally, the results provide support for Edwards and Matarrita-Cascante’s (2011) argument that rural life is complex, and a universal rural condition does not exist. In this study, the opportunities to experience natural environments reported by mothers across the 11 states depended on diverse and varied conditions. These included geographic region and housing location, as well as available (but often limited) family resources. However, two conditions that universally impacted all of the rural, low-income mothers’ utilization of FBNA were (1) access to nature and (2) the availability of cost-effective park and recreational opportunities. Mothers spoke at length about the need for free, easy to access nature-based recreation opportunities to keep themselves and their families healthy. They reported how a lack of these resources negatively impacted their families’ health. This finding supports existing research on children living in rural areas (e.g., Edwards, Theriault, Shores, & Melton, 2014). Studies have found that children with less access to recreational facilities were more likely to be overweight and report decreased physical activity (Gordon-Larsen, Nelson, Page, & Popkin, 2006), whereas living near nature can moderate stressful life events that contribute to psychological well-being (Wells & Evans, 2003).

This study has important practical and policy implications. Most importantly, the findings suggest that concerted efforts should be made to increase access to affordable natural environments in rural settings to promote both individual and family health. Access to nature is an essential first step. Without it, even if mothers have the attitudes, skills, and knowledge to use FBNA to support health, due to limited resources, lack of access would prevent them from meeting their desired goals. Similarly, Sallis, Bauman, and Pratt (1998) argued, “environmental interventions should be put in place before educational interventions are even attempted” (p. 381). The results of the study can inform public policy to influence environmental changes—as the mothers’ testimonies provide valuable practical recommendations of ways to enhance outdoor activities in rural settings. Based on the feedback from mothers, common resources practitioners should invest in include: local parks with different types of amenities (e.g., playground, picnic tables, and walking areas), partnerships with schools (e.g., to share use of walking tracks and playgrounds) and recreation departments (e.g., to provide subsidized programs for the whole family not only children), and community walking paths (e.g., multiuse trails, hiking trails). McElroy et al. (1988) asserts that “The purpose of the ecological model is to focus attention on the environmental causes of behavior and to identify environmental interventions” (p. 366). In-

terventions to promote health should encompass a comprehensive health strategy that takes into consideration all of the intersecting levels of the ecological model so that both individual and social environmental factors can coincide to produce optimal health benefits.

Access to nature-based recreation is especially important for low-income families who may have limited access to more expensive health-promoting opportunities. The availability of public, natural spaces can potentially cut across socioeconomic divides (Ewert et al., 2014) as researchers have argued "If access to nearby nature is indeed a protective factor, contributing to the resilience of children and youth, then if nearby nature is lacking, it is one more strike against poor children who already face tremendous disadvantage" (Wells & Evans, 2003, p. 17). For many of the families in this study, access to free, nature-based recreation opportunities was the only affordable community resource that they had to stay healthy—to them this was more than an "amenity" but a "necessity" to stay healthy (see Kuo, 2004).

Limitations and Future Research

This study has several limitations. First, the data were obtained solely from the voice of the mother. This prevented us from examining other family members' perceptions of participation in FBNA for health promotion. More research needs to incorporate multiple family members' perceptions to truly understand the role of FBNA in daily life and how it contributes to individual and family health.

Second, the interview protocol did not directly ask mothers about their engagement in FBNA. Rather, the data were derived from asking mothers two interview questions about how they maintain their health and that of their children (e.g., "How do you and your child stay healthy?" and "What resources in your community support your health?"). Although this may serve as a stronger testament to the vital role nature played in participant's lives (as almost every mother discussed the topic on their own without any probing), future research studies should specifically ask low-income mothers living in rural areas about their engagement in FBNA to understand the deeper meanings and experiences of family time spent outdoors.

Third, a comprehensive understanding of each participant's unique community environment is limited given that this study used secondary data analysis. While the authors recognize that geographic, population, and economic variation exists in the definition of "rural setting" across the United States, that information simply is not included in this data set. Future studies in this line of research should capture the unique social and geographical environments of each participant to understand their interaction with the natural environment (e.g., how the perspective of a White mother in a rural area with access to many natural amenities may vary from a Black mother in a more agricultural area of the Deep South). Furthermore, the definition of rural used for this study (i.e., counties with a UIC of 5 or higher) is only one way to conceptualize and operationalize rurality. A limitation of this approach is that it can mask intra-county differences and does not capture the unique demographic, cultural and economic differences between rural settings (Hart, Larson, & Lishner, 2005).

Despite these limitations, we know that families living in poverty in counties with less than 20,000 residents value and need FBNA. The results of the study highlight the important role natural environments serve for promoting rural, low-income families' health and the importance of access to cost-effective nature-based recreation opportunities for these families.

References

- Adler, N. E., & Newman, K. (2002). Socioeconomic disparities in health: Pathways and policies. *Health Affairs*, 21(2), 60–76. doi: 10.1377/hlthaff.21.2.60
- Agate, J. R., Zabriskie, R. B., Agate, S. T., & Poff, R. (2009). Family leisure satisfaction and satisfaction with family life. *Journal of Leisure Research*, 41, 205–223.
- Anderson, L., & Heyne, L. (2000). A statewide needs assessment using focus groups: Perceived challenges and goals in providing inclusive recreation services in rural communities. *Journal of Park and Recreation Administration*, 18(4), 17–37.
- Bandoroff, S., & Scherer, D. G. (1994). Wilderness family therapy: An innovative treatment approach for problem youth. *Journal of Child and Family Studies*, 5(2), 175–191. doi: 10.1007/BF02234066
- Bennett, K. J., Olatosi, B., & Probst, J. C. (2008). Health disparities: A rural-urban chartbook. Retrieved from <http://rhr.sph.sc.edu/report/>.
- Burdette, H. L., & Whitaker, R. C. (2005). Resurrecting free play in young children: Looking beyond fitness and fatness to attention, affiliation, and affect. *Archives of Pediatrics and Adolescent Medicine*, 159, 46–50. doi: 10.1001/archpedi.159.1.46
- Christensen, P. (2004). The health-promoting family: A conceptual framework for future research. *Social Science and Medicine*, 59(2), 377–387. doi: 10.1016/j.socscimed.2003.10.021
- Churchill, S. L., Clark, V. L. P., Prochaska-Cue, K., Creswell, J. W., & Ontai-Grzebiak, L. (2007). How rural low-income families have fun: A grounded theory study. *Journal of Leisure Research*, 39(2), 271.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.
- Children and nature network. (2014). Research and resources. Retrieved from <http://www.childrenandnature.org/documents/C118/>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.
- Dix, T. (1991). The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin*, 110(1), 3–25. doi: 10.1037/0033-2909.110.1.3
- Dustin, D. L., Bricker, K. S., & Schwab, K. A. (2009). People and nature: Toward an ecological model of health promotion. *Leisure Sciences*, 32(1), 3–14. doi: 10.1080/01490400903430772
- Eberhardt, M. S., & Pamuk, E. R. (2004). The importance of place of residence: Examining health in rural and nonrural areas. *American Journal of Public Health*, 94(10), 1682–1686. doi: 10.2105/AJPH.94.10.1682
- Economic Research Service. (2003). Measuring rurality: New definitions in 2003. Retrieved from <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>
- Edwards, M. B., & Matarrita-Cascante, D. (2011). Rurality in leisure research: A review of four major journals. *Journal of Leisure Research*, 43(4), 447–474.
- Edwards, M. B., Theriault, D. S., Shores, K. A., & Melton, K. M. (2014). Promoting youth physical activity in rural Southern communities: Practitioner perceptions of environmental opportunities and barriers. *The Journal of Rural Health*, 30(4), 379–387. doi: 10.1111/jrh.12072
- Ewert, A. W., Mitten, D. S., & Overholt, J. R. (2014). Natural environments and human health. CABI. doi: 10.1079/9781845939199.0000
- Frey, B. S., Benesch, C., & Stutzer, A. (2007). Does watching TV make us happy? *Journal of Economic Psychology*, 28, 283–313. doi: 10.1016/j.joep.2007.02.001
- Gillis, H. L., & Gass, M. A. (1993). Bringing adventure into marriage and family therapy: An innovative experiential approach. *Journal of Marital and Family Therapy*, 19(3), 273–286. doi: 10.1111/j.1752-0606.1993.tb00988.x

- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Hawthorne, NY: Aldine de Gruyter.
- Godbey, G. (2010). What is good leisure from the perspective of health? In L. Payne, B. Ainsworth, & G. Godbey, G. (Eds.), *Leisure, health, and wellness: Making the connections* (pp. 41–49).
- Goodsell, T. L., & Harris, B. D. (2011). Family life and marathon running: Constraint, cooperation, and gender in a leisure activity. *Journal of Leisure Research*, 41(1), 80–109.
- Gordon-Larsen, P., Nelson, M.C., Page, P., Popkin, B.M. (2006). Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics* 117, 417–424. doi: 10.1542/peds.2005-0058
- Hart, L. G., Larson, E. H., & Lishner, D. M. (2005). Rural Definitions for Health Policy and Research. *American Journal of Public Health*, 95(7), 1149–1155. doi:10.2105/AJPH.2004.042432doi: 10.2105/AJPH.2004.042432
- Hawks, S. R. (1991). Recreation in the family. In S. J. Bahr (Ed.), *Family research: A sixty-year review, 1930–1990* (pp. 387–433). New York: Lexington books.
- Hebblethwaite, S. (2014). “Grannie’s got to go fishing”: Meanings and experiences of family leisure for three-generation families in rural and urban settings. *World Leisure Journal*, 56(1), 42–61. doi: 10.1080/04419057.2013.876588
- Hendee, J. C. (1969). Rural-urban differences reflected in outdoor recreation participation. *Journal of Leisure Research*, 1, 333–341.
- Henderson, K. A., & Rannells, J. S. (1988). Farm women and the meaning of work and leisure: An oral history perspective. *Leisure Sciences*, 10, 41–50. doi:10.1080/01490408809512175
- Hornberger, L. B., Zabriskie, R. B., & Freeman, P. (2010). Contributions of family leisure to family functioning among single-parent families. *Leisure Sciences*, 32(2), 143–161. doi: 10.1080/01490400903547153
- Huff, C., Widmer, M., McCoy, K., & Hill, B. (2003). The influence of challenging outdoor recreation on parent-adolescent communication. *Therapeutic Recreation Journal*, 37(1), 18–37.
- Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults’ participation in physical activity: A review. *American Journal of Preventive Medicine*, 22(3), 188–199. doi: 10.1016/S0749-3797(01)00426-3
- Hutchinson, S. L., Afifi, T., & Krause, S. (2007). The family that plays together fares better: Examining the contributions of shared family time to family resilience following divorce. *Journal of Divorce and Remarriage*, 46, 21–48. doi: 10.1300/J087v46n03_03
- Izenstark, D. & Ebata, A. (in press). Theorizing family-based nature activities impact on family functioning: Using routines and rituals and attention restoration theory. *Journal of Family Theory and Review*.
- Johnson, C. Y., Bowker, J. M., English, D. B. K., & Worthern, D. (1998). Wildland recreation in the rural south: An examination of marginality and ethnicity theory. *Journal of Leisure Research*, 20(1), 101.
- Kaczynski, A. T., & Henderson, K. A. (2007). Environmental correlates of physical activity: A review of evidence about parks and recreation. *Leisure Sciences*, 29(4), 315–354. doi:10.1080/01490400701394865
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, 15, 169–182. doi: 10.1016/0272-4944(95)90001-2
- Kaplan, S., & Berman, M. G. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science*, 5(1), 43–57. doi: 10.1177/1745691609356784

- Kubey, R., & Csikszentmihalyi, M. (2002). Television addiction is no mere metaphor. *Scientific American*, 286, 74–80. doi: 10.1038/scientificamerican0202-74
- Kuo, F. E. (2004). Horticulture, well-being, and mental health: From intuitions to evidence. In D. Relf (Ed.), *A proceedings of the XXVI International Horticulture Congress: Expanding roles for horticulture in improving human well-being and life quality. Acta Horticulturae*, 39, 27–36. doi: 10.17660/ActaHortic.2004.639.2
- Little, J., Panelli, R., & Kraack, A. (2005). Women's fear of crime: A rural perspective. *Journal of Rural Studies*, 21, 151–163. doi: 10.1016/j.jrurstud.2005.02.001
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, 15, 351–377. doi: 10.1177/109019818801500401
- Minchak, G. (2014). New initiative to help cities increase nature access for children launched by league of cities. Retrieved from www.childrenandnaturenetwork.org.
- Mitchell, R., & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: An observational population study. *Lancet*, 372, 1655–1660. doi: 10.1016/S0140-6736(08)61689-X
- Mowen, A. J., Payne, L. L., Orsega-Smith, E., & Godbey, G. C. (2009). Assessing the health partnership practices of park and recreation agencies: Findings and implications from a national survey. *Journal of Park Recreation Administration*, 27(3), 116–131.
- Outdoor Foundation. (2013). *Outdoor recreation participation report 2013*. The Outdoor Foundation. Retrieved from <http://www.outdoorfoundation.org/pdf/ResearchParticipation2013.pdf>
- Payne, L., Ainsworth, B., & Godbey, G. (Eds.). (2010). *Leisure, health, and wellness: Making the connections*. State College: Venture Publishing.
- Payne, L., & Orsega-Smith, E. (2010). Relations between leisure, health, and wellness. In L. Payne, B. Ainsworth, & G. Godbey, G. (Eds.), *Leisure, health, and wellness: Making the connections* (pp. 21–29). State College: Venture Publishing.
- Riessman, C. K. (1993). *Narrative analysis*. Newbury Park, CA: Sage.
- Rye, J. (2006). Rural youths' images of the rural. *Journal of Rural Studies*, 22, 409–421. doi:10.1016/j.jrurstud.2006.01.005
- Sallis, J. F., Bauman, A., & Pratt, M. (1998). Environmental and policy interventions to promote physical activity. *American Journal of Preventive Medicine*, 15, 379–397. doi: 10.1016/S0749-3797(98)00076-2
- Sallis, J. F., Cervero, R. B., Ascher, W., Henderson, K. A., Kraft, M. K., & Kerr, J. (2006). An ecological approach to creating active living communities. *Annual Review of Public Health*, 27, 297–322. doi:10.1146/annurev.publhealth.27.021405.102100
- Sallis, J. F., & Owen, N. (2002). Ecological models of health behavior. In K. Glanz, F. M. Lewis, & B. K. Rimer (Eds.), *Health behavior and health education: Theory, research and practice* (3rd ed.; pp. 462–484). San Francisco, CA: Jossey-Bass.
- Shaw, S. M. (1992). Dereifying family leisure: An examination of women's and men's everyday experiences and perceptions of family time. *Leisure Sciences*, 14, 271–286. doi: 10.1080/01490409209513174
- Shaw, S. M., & Dawson, D. (2001). Purposive leisure: Examining parental discourses on family activities. *Leisure Sciences*, 23, 217–231. doi: 10.1080/01490400152809098

- Stokols, D., Allen, J., & Bellingham, R. L. (1996). The social ecology of health promotion: Implications for research and practice. *American Journal of Health Promotion, 10*, 247–251. doi: 10.4278/0890-1171-10.4.247
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques* (pp. 96–115). Thousand Oaks, CA: Sage.
- Trussell, D. E., & Shaw, S. M. (2007). "Daddy's gone and he'll be back in October": Farm women's experiences of family leisure. *Journal of Leisure Research, 39*, 366–387.
- Trussell, D. E., & Shaw, S. M. (2009). Changing family life in the rural context: Women's perspectives of family leisure on the farm. *Leisure Sciences, 31*, 434–449. doi: 10.1080/01490400903199468
- Ulrich, R. S., Simons, R. F., Losito, E., Fiorito, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*, 231–248. doi: 10.1016/S0272-4944(05)80184-7
- U.S. Census Bureau. (February 14, 2015). 2010 Census Urban and Rural Classification and Urban Area Criteria. Retrieved from <http://www.census.gov/geo/reference/ua/urban-rural-2010.html>
- Valentine, G. (1997). A safe place to grow up? Parenting, perceptions of children's safety, and the rural idyll. *Journal of Rural Studies, 13*, 137–148. doi:10.1016/S0743-0167(97)83094-X
- Warnick, R. (2002). Rural recreation lifestyles: Trends in recreation activity patterns and self-reported quality of life and health: An exploratory study. *Journal of Park and Recreation Administration, 20*(4), 37–64.
- Wells, N. M., & Evans, G. W. (2003). Nearby nature a buffer of life stress among rural children. *Environment and behavior, 35*(3), 311–330. doi: 10.1177/0013916503035003001
- West, P. C., & Merriam, L. C. (1970). Outdoor recreation and family cohesion: A research approach. *Journal of Leisure Research, 2*, 251–259.
- Zabriskie, R., & McCormick, B. (2001). The influences of family leisure patterns on perceptions of family functioning. *Family Relations, 50*(3), 281–289. doi: 10.1111/j.1741-3729.2001.00281.x