The Road Scholar Hiking Experience

By

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ABSTRACT

The U.S. population is aging, with approximately 13% of the US population greater than 65 years old in 2009 (US Census Bureau). The CDC states that physical activity is one of the most important things that an older adult can do for their health. Physical activity can decrease the risk of many chronic diseases, especially heart disease, which is the leading cause of the death in the United States (Centers for Disease Control and Prevention, 2011). As the size of the older adult population continues to grow, more opportunities are needed to help maintain an active lifestyle. These opportunities need to appeal to the current generation and provide not only physical exercise, but potentially provide for other psychosocial needs as well. Road Scholar is a non-profit organization founded in 1975. They offer nearly 8,000 educational adventures a year in over 90 countries. Most participants are over age 50, with the core participants between the ages of 65 and 80.

The purpose of our current study is to determine the motivations, benefits and limitations of participating in hiking activities among older adults, to assess the effect that these experiences have on the quality of life of older adults, and to enhance or help to create new educational programs and experiences for the older adult population. Interviews were conducted in person and via phone. Interviews were recorded and lasted approximately 45 minutes. Participants were asked to provide a picture that represents their feelings on hiking and Photovoice was utilized to analyze their responses. Photovoice is a form of Participatory Action Research (PAR) by which people create and discuss photographs as a means of catalyzing and personal and community change (Wang and Burris, 1994). We interviewed a total of 11 individuals. Participants were selected among hikers that attended a Road Scholar hike in Switzerland in 2009 and England in 2010. All participants who participated in each hike were asked to participate. Qualitative
analysis was utilized to organize and present the data obtained from the interviews. Specifically, we utilized *thematic networks analysis* as described by Jennifer Attride-Stirling in her article *Thematic Networks: an analytic tool for qualitative research*. This method systemizes the extraction of basic themes, organizing themes, and global themes and represents them as web-like maps and illustrating the relationships between them. The global themes that emerged were reasons for participating in hiking programs, individual benefits of hiking, the hiking experience, the psychological experience of hiking, memorable hikes, home exercise routine, health issues and injuries, hiking groups, and encouraging others to hike.

The eleven participants in this study provided valuable information about their motivations, benefits, and limitations to participating in hiking activities. Despite physical limitations in the majority of participants, all found hiking to be beneficial to their physical and mental well-being. The responses to the questions supported previous research including life cycle theories, and previous studies performed utilizing Road Scholar participants.

**INTRODUCTION**

The U.S. population is aging. According to the US Census Bureau, 12.9% of the US population was greater than 65 years old in 2009, or approximately 39,828,175 people. The population greater than 65 is projected to increase to 72,092,000 (19.3%) by 2030 and 88,547,000 (20.2%) by 2050 (U.S. Census Bureau, 2011). According to the CDC’s *The State of Aging and Health in America*, 32.5% of Americans aged 65 or older report no leisure time physical activity and 23% are obese.

The CDC states that physical activity is one of the most important things that an older adult can do for their health. Physical activity can decrease the risk of many chronic diseases, especially heart disease, which is the leading cause of the death in the United States (Centers for
Disease Control and Prevention, 2011). As the size of the older adult population continues to grow, more opportunities to participate in physical and recreational activities are needed to help maintain an active lifestyle. These opportunities need to appeal to the current generation and provide not only physical exercise, but potentially provide for other psychosocial needs as well.

As a person ages, they increasingly seek self actualization, which is the journey to discover one’s true self, and become that person (Maslow, A, 1962). Maslow states that as the brain ages, it becomes ripe for “peak experiences.” Educational travel can provide these peak experiences, which are viewed as a step along the road to self-actualization (Elderhostel, 2005).

Many opportunities exist to meet the physical, psychosocial, and social needs of older adults. One such organization is Road Scholar (www.roadscholar.org), also known as Elderhostel. Although both names are actively employed, Road Scholar will be used in the paper. Road Scholar is a non-profit organization founded in 1975. Its mission is to empower adults to explore the world’s places, peoples, cultures and ideas, and in so doing to discover more about themselves (Road Scholar, 2011). They offer nearly 8,000 educational adventures a year in over 90 countries. Most participants are over age 50, with the core participants between the ages of 65 and 80 (Road Scholar, 2011). They tailor their programs to appeal to specific generations of older adults. Currently, the baby boomers are reaching retirement age, and it is felt that they will seek the following features in educational travel:

- Smaller groups
- Hands-on, experiential learning, and behind-the-scenes access
- Accommodations and meals “on theme” where feasible
- Plenty of free time, including meals “on your own” built into the schedule
- Active programs
• Shorter programs with accessible pricing (Elderhostel 2005)

When planning exercise interventions and encouraging participation in this population, we must also take into account the differences among generations and determine programs that will likely appeal to many older adults and achieve maximum benefit. The previous generation in retirement, known as the “G.I. Generation,” survived the Great Depression and World War II. On average, they are very group oriented and comfortable with authority. The baby boomers, however, are more independent and resist authority. They also benefit from a prolonged life expectancy, and have more concerns about dementia prior to deterioration of the body (Lee, Y et al, 2010). They therefore will likely seek activities that stimulate the mind (Elderhostel, 2005). The baby boomers are now beginning to enter their 60’s, and, unlike the previous generation, may be delaying retirement due to financial concerns. In addition to financial concerns, some may postpone retirement because work is both stimulating and socially gratifying (Elderhostel, 2005).

The purpose of the current study is to determine the motivations, benefits and limitations of participating in hiking activities among older adults, to assess the effect that these experiences have on the quality of life of older adults, and to enhance or help to create new educational programs and experiences for the older adult population. For the purposes of the study, hiking is defined as any activity involving walking outdoors, regardless of the level of impact, and is used synonymously with walking and backpacking.

It is a qualitative study to assess the attitudes, beliefs, and practices of older adults who participate in group hiking experiences. Interviews were conducted in person and via phone. Interviews were recorded and lasted approximately 45 minutes each. Participants were asked to provide a picture that represents their feelings on hiking and Photovoice was utilized to analyze
their responses. Photovoice is a form of Participatory Action Research (PAR) by which people create and discuss photographs as a means of catalyzing personal and community change (Wang and Burris, 1994). We felt that the addition of a photo could help to enhance the data obtained during the interview.

We interviewed 11 individuals. Participants were selected among hikers that attended a Road Scholar hike in Switzerland in 2009 and England in 2010. All of the participants in each hike were offered a chance to participate. IRB approval was obtained and maintained throughout the study period. Telephone consent was obtained for the telephone interviews, and written consent for the interviews performed in-person. Their interviews were recorded and transcribed by an outside service. The transcription was analyzed using ATLAS.ti, which is a software program utilized for qualitative research (ATLAS.ti, 2011). All data was reviewed and analyzed by two investigators.

**LITERATURE REVIEW**

Creating hiking programs for older adults involves considering many factors that effects one’s ability and desire to participate. Programs that involve exercise in older adults should take into account the physical, social, and psychological issues facing this population. The purpose of this literature review is to examine the natural human life cycle, psychosocial and physical benefits of exercise, current exercise recommendations, as well as potential risks as they relate to physical activity in the elderly.

**Methods**

The search was conducted using Google Scholar, an online database. Articles were also selected from the reference list of relevant articles. The following search terms were included: elderly AND “hiking” [MeSH], “walking” [MeSH], or “exercise” [MeSH]; “life cycles” and
exercise [MeSH], “nature” and psychosocial benefits” [MeSH], and “exercise” and “psychosocial benefits” [MeSH], and “exercise” and “injury” [MeSH]. The CDC website was also searched for “exercise” and “older adults.” The titles and abstracts were reviewed to determine if a given article met the inclusion criteria.

**Inclusion criteria:**

- Articles in English
- Full text available
- Relevance to current research

**Exclusion criteria:**

- Not relevant to current research topics

**Life Cycles**

When examining the motivations for participating in physical activity among the elderly, one must consider life cycle issues (Sugerman, 2001). Life cycle is used to depict the underlying order of the human life course. In 1986, Kermis identified three dimensions of aging:

- **Chronological** – everyone ages with time.
- **Biological/Physiological** - biological development ceases and deterioration begins.
- **Psychosocial** - psychological and social development.

Motivations for leisure activity can be used as a means to measure psychosocial aging. Four psychosocial motives for leisure activity were identified (Beard and Reghab, 1983):

- **Intellectual** - learning and exploring.
- **Social** - the need for friendship/relationships.
- **Competence/mastery** - the need for achievement and competition.
- **Stimulus-avoidance** – the need for rest and relaxation.
Older adults tend to focus more on maintaining dignity, respect, and control, and less on increasing wealth and job success (Sugerman, 2001). As the elderly frequently have less family obligations, their leisure patterns change and are less frequently associated with home and family. The term “successful aging” has been coined to embrace not only improving longevity through exercise, good nutrition, and avoidance of high-risk behaviors such as smoking, but also to include behaviors that result in learning and mental stimulation (Mental Stimulation and Lifelong Learning, 2007).

Some life cycle theories that focus on an older adult’s adjustment to aging include disengagement, continuity, and activity theories (Sugerman 2001). The disengagement theory says that older adults withdraw from society to benefit themselves by allowing separation to prepare for death and benefit society by making room for younger generations (McGuire et al, 1999). The continuity theory suggests that a person develops a personal style of adaptations and adjustments over the course of their life, and this helps to determine their success in aging (McGuire et al, 1999). The activity theory states that activity, whether physical, social or mental, allows the elderly self-select their own roles instead of following ones given to them in society.

**Psychosocial Benefits of Activity in Older Adults**

The New York Times conducted an interview with Dr. Andrea Fabor Taylor, who is a child environment and behavior researcher at the University of Illinois in 2008. She discussed the importance of nature in our ability to concentrate. She stated that we have 2 forms of attention: directed and involuntary. Directed attention is used to perform work, write papers, etc. Involuntary attention occurs when we automatically respond to things such as a beautiful flower, or a baby crying. Directed attention causes fatigue, and having views of nature have been shown to improve performance in children. She stated that “for so long we have ignored the effect our
physical environments have on our ability to pay attention.” In 2002, she studied the relationship between “near home nature” and three forms of self discipline among 169 inner city boys and girls. In girls, she found that the view of nature accounted for 20% in the variance of scores. No difference was seen in boys. It is hypothesized that because the boys spend more time away from their homes, more distant green spaces may play more of a role (Taylor, 2002). Although her research is mainly in children, it stresses the importance of nature in our environment, and helps to explain the reason why nature is a common motivator to participate in hiking activities.

The importance of nature in has also been studied in adult care facilities for patients with Alzheimer’s disease. Cooper, Marcus and Barnes discussed four case studies of healthcare facility gardens in California. They performed a visual analysis of the physical site, systematic non-intrusive behavioral observation, and interviews with garden visitors. After spending time in the gardens, over 75 percent of visitors reported feeling more relaxed and calmer and 25 percent felt refreshed and rejuvenated. They also compared two mood shifts (a pleasing drop in energy level, and spiritual uplift) in garden visitor groups, which included staff, patients, and visitors. They found that visitors were most likely to experience a pleasing drop in their energy level (i.e., visitors were more relaxed, or their stress level went down), and patients were more likely to report a spiritual uplift.

Deborah Sugerman has published several articles utilizing Road Scholar hikers to study the motivations of older adults to participate in these programs. Most Road Scholar participants and 55 years of age or greater, although a small number are younger and accompany a family member. In 2001, Sugerman found that the following were the most common motivators for adults to participate in outdoor adventure programs: being in a natural environment, being physically active, learning about outdoor skills and the environment, and being in a group of
people with similar interests. Motivation differed based on age (less than or greater than 65),
gender, and program format.

Sugerman also went on to study the effects of retirement on the motivations for outdoor
experiences. Seven hundred and eighty-two individuals enrolled in “an outdoor experience
involving small groups of people participating in self-propelled activities such as hiking,
canoeing, and cross-country skiing” through Road Scholar during the summer and fall of 2000.
She utilized the Recreation Experience Preference (REP) Inventory, which is designed to
“measure the extent to which specific experiences are desired and expected from leisure
activities.” The surveys were completed prior to beginning the activity and a 60% return rate was
received from organizations. Only surveys with at least 80% of responses were used. Surveys of
individuals under 50 were included (they only counted for 1.2%). Data was analyzed using
multivariate analysis of variance controlling for gender.

Those that were not retired rated four domains significantly higher as a motivation than
individuals who were retired:

1. Escape personal pressure
2. Escape physical pressure
3. Nature
4. Physical rest

Retired individuals rated introspection and nostalgia significantly higher. Both groups were
motivated to be involved in nature, be physically active, be involved in a learning atmosphere, be
in a group of respectful peers where they could meet people who had similar interests, become
competent in the program area, and rest and relax. They were motivated by the intellectual
stimulation of learning, exploring, and discovering as well as social motivations including the
need for friendship and interpersonal relationships, and the need for the esteem of others. They also sought competence mastery i.e. the desire to achieve, master skills and challenge themselves. The data supports the activity theory of aging and the relationship between activity and successful aging as discussed above (Seigenthaler, 1996), with the caveat that the quality of the activity is most important as opposed to the frequency of the activities (Hull, 1990).

Social and physical activity is consistently associated with higher life satisfaction, better health, longer life, and lower rates of institutionalization (Steinbach, 1991). Maintaining social relationships becomes more difficult with advancing age due to the increasing death rate, a reduction of sibling relationships due to the declining birth rate, earlier exclusion from the labor market, possibly a lack of income, decreased mobility secondary to injury and chronic health issues, inability to keep up with modern technology, and difficulty managing the spatial environment including public and private transportation (Mollenkopf, 1997).

Mollenkopf et al studied the mobility needs and hindrances in three European countries in the paper entitled Outdoor Mobility and Social Relationships of Elderly People. As a whole, leisure activities performed with others are seen as more important than those that are solitary. Childless elderly have fewer activities both inside and outside the home compared to those with children. They also found that the elderly become more dissatisfied with their leisure possibilities as they get older, indicating that many would like to be more active outside the home, but are limited due to the presence of barriers instead of lack of desire. The most frequent barrier was poor health. Other barriers include long traveling distances, lack of options in immediate area, high costs, lack of companion, and caring for another family member.

**Health Benefits of Exercise**
Health benefits of physical activity include both primary and secondary prevention of many chronic diseases, including cardiovascular disease, cancer, diabetes, hypertension, obesity, depression, and osteoporosis (Warburton, et al, 2006). Both men and women who reported increased levels of physical activity were found to have a 20-35% reduction in the relative risk of death of all causes, with more recent studies demonstrating up to a 50% reduction (Warburton, et al, 2006).

Physical activity in the elderly is associated with a lower instance of cardiovascular disease. Geffken, et al. utilized data from the Cardiovascular Health Study cohort of 5,888 men and women greater than age 65 in order to study the affect of physical activity on markers of inflammation. There is growing evidence of an association between atherosclerotic plaque and inflammation. The investigators found that markers of inflammation, including C-reactive protein, fibrinogen, Factor VIII activity, white blood cells, and albumin in individuals in the highest quartile of physical activity were 19%, 6%, 4%, and 3% lower, respectively, after adjusting for gender, presence of cardiovascular disease, age, race, smoking, BMI, diabetes, and hypertension. This data suggest that increased physical activity is associated with reduced inflammation.

Siscovick et al also utilized the Cardiovascular Health Study cohort to assess the cross-sectional association between exercise intensity in later life and coronary heart disease risk factors and subclinical disease. They studied 2,274 men and women aged 65 and older who were free of clinical cardiovascular disease or impaired physical function and categorized physical activity as low, moderate, and high. They found that increasing levels of physical activity improved fasting insulin and serum fibrinogen levels, and reduced lower extremity arterial disease by ankle/arm index and evidence of myocardial injury by cardiac infarction/injury score.
They concluded that increased exercise intensity is associated with reduced prevalence of several markers of subclinical disease.

The above studies, however, were retrospective. Oida et al studied 245 elderly individuals prospectively enrolled in an exercise program over 5 years. Compliance rates were 67.7% the first year and 43.9% in the final year. The participants were recruited voluntarily, and the baseline functional status of participants in the intervention was statistically better than that of the control group. After controlling for confounding factors such as death and activities of daily living (ADL) impairment, the female intervention group showed that the exercise intervention was “clearly effective for preventing the occurrence of death and almost effective for preventing the occurrence of ADL impairment of the elderly females (Oida et al, p590).” Unlike previous studies that showed a reduced relative risk of death in the elderly who participate in social and physical activities (Glass et al, 1999), this study did not detect any differences between the control and intervention group regarding social activities. No significant difference was detected in the male portion of the group, possibly due to small sample size. The males also reported the same amount of physical activity at both the beginning and the end of the study, unlike the female subjects in the intervention group, who increased their physical activity. Future prospective studies with larger sample sizes should be performed to determine the benefit of such an intervention on a larger group of individuals.

Research has also begun to show changes in the brain associated with exercise. Research published in *The Proceedings of the National Academy of Sciences* suggests that the hippocampus, a part of the brain important to forming memories, was expanded by 2% in elderly participants who participated in a walking program. This part of the brain usually begins to atrophy in the late 50s or early 60s, so any increase is considered fairly significant (Span, P.,
2011). In addition, leisure time physical activity, even at a moderate level, has been shown protective effects against dementia (Lee, Y, et al, 2010).

Exercise Recommendations for the Elderly

The CDC has the following recommendations for physical activity in adults over the age of 65 who are generally fit and have no limiting health conditions:

- 2.5 hours of moderate intensity aerobic activity per week and muscle strengthening activities 2 or more days per week or
- 1 hour and 15 minutes vigorous aerobic activity per week and muscle strengthening activities 2 or more days per week or
- An equivalent mix of moderate and vigorous intensity aerobic activity per week and muscle strengthening activities 2 or more days per week (How Much Activity do Adults Need?, 2011).

An exercise program for the elderly should not only improve fitness, but should strive to also maintain quality of life and functional capacity (Pollock, 1994). As the elderly person has more physical limitations, the intensity of the work-out should be decreased (40-80% maximal heart rate compared to 50-85%) and increase the frequency and duration (Pollock, 1994). The elderly should also perform activities that involve strength and resistance training and avoid activities that are high impact (Pollock, 1994).

Possible Risks of Hiking

Aging contributes to both functional and structural alterations to the human body, making elderly people more likely to overload the musculoskeletal and cardiovascular systems (Kallinen, M. and Marrku A., 1995). Exertional injuries are common in the elderly and are connected with the degenerative aging process (Kallinen, M. and Marrku A., 1995). Muscles are reported to be
the most common injured area, and most injuries are mild. It should also be noted that inactivity and immobilization are more deleterious in the elderly than in young adults. Exercise is therefore very important in older adults, but it is important to assure appropriate training programs, careful warm up and cool down, multiphasic training to include balance, coordination, and reaction time, and muscle strength can help prevent injuries from occurring (Kallinen, M. and Marrku A., 1995).

In 1991, Pollock, et al performed a 26-week aerobic and resistance training program on healthy volunteers between the ages of 70 and 79. Subjects were separated into either a strength training or walk/jog group. In the strength training group, 8.6% of subjects were injured and 42.9% were injured in the walk/jog group. All but one of the injuries in the walk/jog group occurred after subjects increased intensity by alternating either moderate and fast paced walking intervals or walking/jogging intervals. All injuries involved the lower extremities. The authors felt that the high impact of jogging contributed a many of the injuries. Therefore, the elderly should take into account any previous activity and level of impact prior to planning exercise routines.

Some studies have been performed to assess the safety of certain forms of activity in the elderly. M. Burtscher et. al (2001) studied the effects of hiking at high altitude on 20 healthy elderly volunteers ranging from 55-77 years. Of the yearly 100 million visitors to high altitude areas, about 15% are elderly. About 30% of all fatalities during mountain sports are from sudden cardiac death, and this rate increases with age (Burtscher et all 1993). Therefore the team decided to study healthy volunteers with no acute or chronic conditions. All volunteers received a complete physical examination and incremental cycle ergometer to exhaustion. Maximal oxygen consumption (V02max) was determined by the mean of the two highest values during the
final minute of exercise. Subjects were monitored at low and high altitude and placed on hiking trips (2.5 hours the first day to 5 hours the 6th day) and were set at 50% of individual VO2max (heart rate was continuously monitored). Perceived hiking intensity, stopping frequency, fluid and food intake did not differ between the two groups. Arterial oxygen saturation (SaO2 measured using an Onyx Pulsoximeter, Sanesco, Austria) was diminished on all days at the high altitude compared when compared to the subject’s baseline, and remained constant at low altitude. SaO2, however, increased significantly between days 1 and 6. Post exercise heart rates were elevated for the first five days in high altitude compared to only the first two days at low altitude. Overall, the one-week hiking experience had only minimal effects on cardiopulmonary parameters after an overnight rest. They concluded that apart from mild acute mountain sickness which can be corrected with a daily aspirin, no health problems may arise from inactivity at high altitude among the healthy elderly. Prolonged hiking, however, affected the cardiopulmonary parameters more at high altitude compared to low altitude, mainly with a decrease in SaO2. Acclimation can take several weeks. While the decrease was small in the healthy volunteers, it may be more pronounced in those with cardiopulmonary disease.

METHODS

Participants

This study was approved by the Institutional Review Board of the University of North Carolina at Chapel Hill. Eleven participants were recruited from 2009 to 2010 who participated in a Road Scholar Hiking Trip to either Switzerland or England. The principle investigator attended the hikes, and asked all participating hikers if they were willing to participate in a one-hour interview. No participants declined the interview. Participants were 55-85 years of age. Some were retired while others were still working. Six males and five females
were recruited and completed the interviews. Six of the participants participated in the Switzerland hike, and five in the England hike.

**Interviews**

The principle investigator was on-site for the hikes, and six interviews were held in person. The remaining five interviews were conducted by the principle investigator or me via telephone. Participants that were not interviewed in person were contacted via email and asked if they were willing to participate in the interview. All five participants contacted agreed to participate. Interviewers underwent CITI training prior to performing interviews, which is a formal online course that provides research ethics education. All interviews were recorded and transcribed verbatim. Transcripts were reviewed by the interviewer for accuracy.

The questions asked during the interview changed throughout the course of the study, and new questions were added after review of the data. Therefore, some of the data is only available for later interviews. The participants were asked questions about the reasons for the current hike, reasons and motivations for hiking, benefits and barriers to hiking, most exciting hikes, experiences while hiking, home exercise routine, hiking ritual, thoughts while hiking, hiking groups, and overall health (Please see appendix A for a complete list of questions).

**Photovoice**

Participants were also asked to submit a picture related to their hiking experience. After the picture was received by the interviewer, the participant was asked questions by phone or via email relating to the picture they submitted, including why the picture was chosen and why it is important, what images stand out, what they like and how they feel about the picture, and what, if anything would they change regarding that hiking experience (see appendix B for a complete list of questions).
Photovoice is a well-known research method that is commonly utilized for public health promotion. It is a process by which members of a community can identify, represent, and enhance their community through a specific photographic technique (Wang, C. and Burris, M., 1997). Photovoice, however, is adaptable and can be used for diverse public health issues. It enables health researchers to perceive the world from the viewpoint of the research participant. In its traditional usage, researchers supply cameras to participants and the pictures are returned. We modified this and asked our participants to supply pictures of hiking trips already completed. Utilizing photovoice confers benefits for both interviewers and participants. In our study, we were able to obtain visual insight into the hikers’ experience, and gain valuable knowledge of what hiking means to them. The participants were able to relive a positive moment of their experience and further consider what hiking means to them (please see appendix C). We have currently only received photographs from two participants, and plan to incorporate this data into our analysis once the sample size increases.

Data Analysis

Qualitative analysis was utilized to organize and present the data obtained from the interviews. Specifically, we utilized thematic networks analysis as described by Jennifer Attride-Stirling in her article Thematic Networks: an analytic tool for qualitative research. This method systemizes the extraction of basic themes, organizing themes, and global themes and represents them as web-like maps and illustrating the relationships between them. See figure below.
The data was coded roughly based on the questions asked into the following categories: reasons for hiking, benefits of hiking, long versus short hikes, home exercise routine, other physical activities, hiking ritual, emotions while hiking, companionship, hiking philosophy, emotions while hiking, favorite hikes, motivations to continue hiking, and health concerns and injuries while hiking. Salient, common, or significant themes were then extracted from the coded text by the creation of a chart allow for easy comparison among the interviews (please see appendix D). Themes were then refined to determine if they are specific enough to be discrete or broad enough to encapsulate a set of ideas in numerous text segments. Themes were then assembled into groups that create the thematic networks. These themes become the basic themes, and were rearranged into organizing themes. The global theme was then deduced in light of the basic themes. Themes were then verified by reviewing the data again in the context of the themes.
After the networks were created, the researchers then described and explored the thematic networks by reviewing the original data with the use of the networks. A summary was then created for the networks. Following this, the patterns were interpreted and conclusions drawn based on the original research questions and background data.

Both investigators reviewed all transcripts and performed the analysis separately. Each reviewer assessed individually for themes, and a consensus was achieved. The results below are listed based on the individual categories that were coded and assessed individually for themes.

RESULTS

All participants agreed to participate in the interview. Two participants sent pictures and responded to the photovoice questions by the time this paper was completed and therefore formal analysis was not performed. The global themes that emerged were reasons for participating in hiking programs, individual benefits of hiking, the hiking experience, the psychological experience of hiking, memorable hikes, home exercise routine, health issues and injuries, hiking groups, and encouraging others to hike.

Reasons for Participating in Hiking Programs

Participants were asked about their reasons for hiking, their motivations to continue hiking, and their reasons for participating in the current hike. Reasons cited for participating in the current hike centered around several themes: spend time with family, a desire to travel to the location, the ability to hike at the level of difficulty presented, to spend quality time with family, the need to travel during specific times of year, positive past experiences with Road Scholar, and past experiences in the country traveled. One participant presented two reasons for participating
in the current hike: “One, of course, is to enjoy learning about a country and its people through a physical activity, and hiking is one of my favorite physical activities.”

Participants were then asked about broader reasons for hiking and motivations to continue hiking. Most participants gave more than one reason including: health benefits, exercise, the scenery, in support of spouse, relaxation, meditation, convenience, graceful aging, psychological benefits such as preventing depression, improving your overall well being and desire to eat healthy, stress avoidance, weight control, and improve stamina for other activities. “It's just a very interesting place to be, out in the woods, and it feels good. And I feel good after I do it.”

Many participants reported that being in nature/outdoors, enjoying the scenery, and fresh air was their main reason for hiking. One participant described the following: “People call me a panorama freak. I just love to go up on a hill and look around, see the different rows of mountains, the different horizons, and I just can't get enough. To me, every single mountain looks different. Sometimes I think it's just like people, you know. In a way, they look the same, but if you look closer, they have a special shape and special colors. And then of course in different weather, they look different because of the light. Once on top of a mountain, I could just sit there for hours...”

One participant had a very specific experience that led to his desire to hike. “I met an old lady about one year before I started backpacking. She was at least 70, and she had gray hair down to her waist. And she was skinny dipping in a lake. I waited until they were putting some clothes on, and I went over there. And I said to her, "These things on the ground, these are backpacks." And the old lady said, "Yes, these are backpacks. If we couldn't backpack, we
wouldn't be alive." I said, "Wow. That is really something." I said, "Where are you going from here?" She said, "Well, we're going down to the store, and we're going to re-provision because we've got two more weeks." And I said, "Two more weeks." "Yes, we've been on the trail ten days now already. Let me tell you something else there, sonny." She says, "The older you get, the more active you have to try and be." Wow. That burned in my brain, and it'll stay with me until I die. That's why I walk."

The reasons cited above can be combined into the following themes: 1) physical health benefits, 2) interpersonal relationships, and 3) psychological benefits. While almost every subject mentioned a health and psychological reason for hiking, participants were divided in utilizing hiking as a means for interpersonal relationships. Although all attended a group hiking experience when enrolled in this study, about half of participants preferred to hike alone on a regular basis.

**Individual Benefits of Hiking**

Many of the benefits of hiking discussed during the interview overlapped significantly with the reasons and motivations for hiking. The benefits, however, deserve a distinct category, as they tended to be more abstract, while many participants discussed distinct benefits that pertained to their individual situation. The benefits cited were centered on decreased health problems, overall physical well-being, improvement in mental functioning, and stress reduction. Specifically, participants discussed the following benefits: good health, physical and mental energy, decreased cholesterol, decreased blood pressure, musculoskeletal benefits such as improving function following orthopedic surgeries, stress reduction, weight control, and
improvement of sinus/breathing issues.

Participants also cited learning as a major benefit: “I enjoy planning trips around walking, and I think that’s one of the benefits of Elderhostel. When you take some of these walking trips as a vacation through Elderhostel, there’s a very nice educational component, so you’re also learning many things. For example, on this Switzerland trip, we went through a Benedictine monastery that was beautiful. We went to a beautiful church in St. Gallen and a library there that dates way back. And so you’re walking at this point, but you’re also learning. And you’re learning about the different people and the culture, so it’s a very nice learning experience. So walking is for me.”

Participants seemed to utilize hiking as much more than simply a method of exercise, but as an activity that can encompass a wide array of their goals. Getting exercise, for example, can also help to relieve stress while experiencing a new environment and learning new things. “Well, I think the primary motivation, of course, is it’s an excellent conditioner, you know, being physical fit. And second and probably more important is that it brings you in contact with nature. So I like being out in nature. So hiking is really a nice, you know, outlet.”

The Hiking Experience

The hiking experience can be broken down into preparation, details of the hike itself, activities performed while hiking, and companionship while hiking. Participants were asked what they experienced during the hike, and if the experience differed based on the length of the hike. Prior to hiking, participants reported stretching, putting on hats/sunglasses, bug spray, and packing water/snacks. One participant hiked without any pre-preparation. Many had specific
times of day in which they prefer to hike, and most preferred early morning or evening: “a slanting sun is somehow rather visually a more interesting environment than high noon.”

Some participants experienced different things when taking short versus long hikes. Some preferred long hikes: “Well, some days I might just have time for a short walk, like a one or a two-mile walk. So I try to pace myself and enjoy that amount of time that I have. If I have more time and I do about four miles, I pace myself a little differently. And I do feel I feel better when I walk a longer distance. It’s like your endorphins are sort of kicking in and you feel better and it’s a sense of accomplishment for me that I walked more. And you release your tension in a different way.” Some preferred shorter hikes: “It may be that I'm on a three-mile hike or I'm on a 15, 16-mile hike. The longer ones, towards the end of the day, it's less likely to be thinking about interacting with nature there. You just want it to get over with. So you're tired.”

Even though all participants were on similar hiking trips, their preference for activities while hiking varied greatly. One participant preferred listening to music/radio, while four participants preferred to enjoy the scenery. “I don’t understand why somebody would want to go in the woods and then try not to be there...when I'm in the woods; I want to hear the woods. I want to hear the birds or the frogs or the ducks or the... or somebody chopping somewhere or the woodpeckers or the partly fallen tree that's leaning against another tree so when the wind blows it shrieks. I mean there are all kinds of interesting stuff in the woods. Also, you can hear the mountain bikes coming up behind you.” Participants that preferred to hike in groups liked the conversation while others preferred quiet. “I kind of enjoy just being by myself. I don’t want to talk to anyone or see anyone. I’d rather just get into a certain rhythm and walk by myself.” Most participants discussed some form of inner thoughts, such as meditation, praying, observing the scenery, working through life problems, and daydreaming. One participant liked to look at an
odometer to see how far he had gone and would do the math in his head. “My motivation, even though I'm not heading to do anything in particular other than get some exercise, is my odometer. I like to know how far I've gone and how much I've accumulated.”

Companionship while hiking varied, and many participants reported a combination of walking with others versus walking alone. Five participants hiked with their spouse, seven at least occasionally hiked with groups, and seven walked alone. Preference for hiking was fairly evenly spaced among gender.

The Psychological Experience of Hiking

Participants described many different emotions and philosophies related to their hiking experiences. The themes that emerged were the pursuit of self-actualization, the goals related to the hiking trip, and hiking as a therapeutic activity. Participants described being one with nature, experiencing a sense of euphoria, and feeling free, suggesting the pursuit of a goal higher than physical fitness and an attempt to find one’s true self. “Well, one of the things that I experience is I like my mind to really go out and actually get to the point of a state of euphoria where you are really feel like you're communicating with the trees. It's that whole emotional state that you move into when you're hiking is probably the thing that I benefit the most out of in terms of hiking.”

One participant was very goal oriented and felt a sense of accomplishment after reaching his target. Another participant, on the other hand, felt that the journey was the goal. “So I'm not focused on the goal. It's really what I see during the trip, you know.” Some saw hiking as therapy: “Sometimes you could start walking and you, at least for me, I'm thinking about the
same thing and I'm obsessing on it. And then the more I walk, I let it go. I just let it go, and I feel so much better.”

Others feel hiking is a way to experience nature in different ways: “I think it’s a wonderful, you know ... it's a wonderful visual experience as you can see so many things. I mean as a matter of fact, if you stopped, you could probably spend the day wherever you were standing; looking at what there was to see in the woods. And the real potential of this, potential beauty of this is that it changes as the light changes. It changes in the rain. And you can see it in different ... and of course it changes in the seasons. And so, you know the idea of that potential and that change I think is a kind of wonderful orientation to the world.”

One participant adopted a walking philosophy: “Chi Walking was founded by a couple from Asheville, actually, but it’s not international. They do workshops all over the world, and they've got a book out. Actually, it's been out for some time. Chi walking and chi running, but it's principles that you do to try to keep you injury-free. I think about those principles and attempt to walk that way.”

Memorable Hikes

Participants were asked to describe other hikes that they have performed, and what their favorite hike was. Our participants have hiked all over the world, including the Sierras, Grand Canyon, Croatia, the Alps, etc. Many had been on multiple Road Scholar hikes. Four participants in total were specifically asked about their favorite hike, and only one provided a specific location. The other three were centered on a high level of difficulty, a positive social experience, or positive outdoor conditions. One participated stated that “the favorite depends on the day, the time of day, the weather, my whim”. These themes also paralleled other hikes discussed by the
participants. Another reason for a memorable hike included beautiful scenery “[The Sierras] was probably the most gorgeous setting that I've ever been to. The wife of the gentleman that went with us painted a scene with the waterfall.” Several participants discussed hikes that involved seeing and learning new things: “Last spring, we went to Croatia, and that was just another beautiful country. And it's just like coming out in its own now, but it's on the Mediterranean. And you still see much of the old culture there. You see the widows that still dress in black and some of them are still wearing babushkas on their head. The hiking there was really, really wonderful”. Two participants reported goal-oriented hiking trips. One went on scouting trips, and the other stopped to hike while driving cross-country to visit family.

**Home Exercise Routine**

All participants also exercise at home. Eight (four males and four females) exercise regularly at home, while three participants (two male and one female) exercise inconsistently. The amount and consistency of exercise varied greatly. Two participants reported the following routine: “We walk four days a week, we cycle two, and we rest one.”

They reported multiple other activities other than hiking, including cycling, yard work/gardening, water aerobics, golf, yoga, cross country skiing, and tennis. Cycling was by far the most common activity (seven participants), followed by gardening/yard work with three participants. “I've got a little less than an acre here and a whole lot of lawn and a lot of trees. I do a certain style of what I call machete gardening. So that involves some lifting and striking and pulling and stooping and stuff like that. I biked today to the library to do my tutoring, and I will bike various places or walk. I mean I'm about, oh, about six blocks from downtown, and usually I will walk rather than drive that.”
Home exercise routines have changed significantly over time. Many participants have decreased the intensity of their activity with aging. Several began their exercising with running, but now no participants report running. “I was used to walking four miles a day, five to six days a week. And now I do a lot of water aerobics. It's good for not pounding your joints and it's good for keeping your muscles active, but it's not good for losing weight.” One participant continues to hike frequently near his home. “A colleague and I now are doing 40 peaks in North Carolina and Tennessee. That's 6,000 feet above ... well, there's more than that. There are 40 that are registered. And so we're hiking those 6,000-plus peaks, and we finished our number 17 two weeks ago. So we've still got about 23 more to go.”

Health Issues and Injuries

The participants cited the following chronic health issues: bilateral hip replacements (two participants), heart attack, back problems, breast cancer, circulation issues, heat intolerance, high cholesterol, bilateral knee replacements, arthritis in hip, knee arthroscopy (three in one subject), great toe surgery, lower extremity edema, pain in knees, and rotator cuff tear. Despite the health problems, all participants reported returning to hiking and positive experiences from continuing to exercise. Many, however, did modify their exercise routine and decrease distance and/or intensity at least temporarily. “And that's when I had lots of thoughts in my head. I'm thinking, oh, today, I'm feeling needles. Now I'm getting shooting pains up my legs. Keep going. The circulation will get better. You know, it did, and I just kept walking and that was it. Actually, that, again, was almost like a therapy. I just said to myself I have to do it, and I did it and I felt good.”
One participant reported being flat-footed with extreme pronation, requiring her to tape her feet prior to a hike. It also slows her down. Another participant reported difficulty starting hikes, but then improvement once she gets into a rhythm. “When I got into it at first, I thought oh, I don't know if I'm going to be able to do this. The first day was really tough, and the guide said, "Oh, it's just flat mostly." And I thought, oh, thank God. Because I'm looking around and I'm thinking, I don't know. Anyway, so most of it was flat, and then all of the sudden there's this steep hill off the road. I thought holy smoke. I can't even see the top of this hill. And I got up there, and I thought hmm. Okay. I made it. No problem. And then there was another one even steeper. And I thought, oh, holy smoke. And bigger. And then the next day was kind of more of the same. And what happened to me was ... and I felt more and more able every time, and I got happier once I completed about three or four days of this. And it took ... it did take that long for me to really appreciate what I was looking at and also to begin to appreciate the people I was with because that was an outstanding group.”

Serious injuries while hiking included snapped quadriceps tendon and strained/torn ligament in foot. Most other injuries were mild and consisted of bumps and bruises from minor falls. “I snapped my quadriceps tendon hiking in New Zealand six years ago. And so that reduced certain things that I can do now because of that injury.”

Encouraging Others to Hike

We asked participants what they do (or would do) to encourage others’ to hike. The responses fell into the following categories: discuss physical and psychological benefits of hiking, living by example, and encourage the social aspect of exercise. One participant suggested
the following: “Well, I've found that typically all you can do is talk about your experience in
terms of role modeling. So you can't encourage anybody if they won't listen to you. People are
envious, you know, and like to hear about the hiking. And my sons, they don't hike, but they ...
well, on my 70th birthday this year, they went with me on the coast-to-coast hiking, six stages of it
for seven days, and they've come back really wanting to get into hiking, want to do more of it. So
living by example.” Another participant does the following: “I'll call somebody and say do you
want to go walking or do you want to go ... and I've done that. I've gotten people out on walks as
a social event. Like do you want to have lunch and then go for a walk? Or do you want to go for
a walk and have lunch? Usually there's food with it.”

Hiking Groups

For many of the hikers interviewed, Road Scholar was the only hiking group in which
they participated. Some participants participated in either local organized groups, or more
informal groups. “There's a group of women about my age, and on Tuesday mornings, we just go
in this area, you know. Sometimes we're in the mountains. Like for example, yesterday, we did
the arboretum, and that's about three and a half miles. Our limit is about three, three and a half
miles. And sometimes we pick an area in the city and walk that. I mean like a neighborhood,
and our leader usually has plotted about a three-mile walk.” The hikers heard about groups
through the internet, email, and/or newsletters. “Also, some of the groups in the area have ...
well, there's a newsletter and there's e-mail that comes out from an organization called "Friends
of the White Clay Creek State Park," which I belong to which is kind of a support group which
has events and also does things like maintain trails and things like that, which I've also done.”
DISCUSSION

The eleven participants in this study provided valuable information about their motivations, benefits, and limitations to participating in hiking activities. Despite physical limitations in the majority of participants, all found hiking to be beneficial to their physical and mental well-being. Our population decreased their physical activity based on injuries and as they aged. This practice is supported by an article published by Pollock in 1994 that provided exercise recommendations for the elderly. He stated that “as the elderly person has more physical limitations, the intensity of the work-out should be decreased.” He also stated that “the elderly should also perform activities that involve strength and resistance training and avoid activities that are high impact (Pollock, 1994).” Many of our participants ran marathons, triathlons, and backpacked when they were younger, but progressively decreased the impact of their workouts to activities such as hiking, water aerobics, and golf as they aged.

We are interested in encouraging sedentary adults to begin hiking, and therefore asked our participants what they do (or would do) to encourage others. They recommended that we discuss physical and psychological benefits of hiking, live by example, and encourage the social aspect of exercise. Our participants discussed many different motivations to participate in these programs, and the general population will likely also need motivation from several different angles. Therefore, a multifaceted approach is likely to be the most successful intervention, and should incorporate the recommendations listed above. Providing elderly adults with some of the personal stories supplied by our participants may prove to be a strong motivator.

Our results supported several life-cycle theories discussed in the literature review. Our participants demonstrated the four psychosocial motives for leisure activity as identified by
Beard and Reghab in 1983, including intellectual, social, competence/mastery, and stimulus avoidance, although no participants displayed all of the motives. The participants that preferred hiking mostly for social reasons did not feel as much a need for achievement and competitions, and vice versa. Almost all participants cited a desire for learning and rest/relaxation. By participating in physical activity and hiking groups, our participants were supporting the activity theory by pursuing their own goals and desires, and advancing the physical and mental knowledge and abilities. This theory states that activity, whether physical, social or mental, allows the elderly to self-select their own roles instead of following ones given to them in society. Many also described motivations that support the theory of self-actualization. They described being one with nature, experiencing a sense of euphoria, and feeling free, suggesting the pursuit of a goal higher than physical fitness and an attempt to find one’s true self.

In 2001, Sugerman found that the following were the most common motivators for adults to participate in outdoor adventure programs: being in a natural environment, being physically active, learning about outdoor skills and the environment, and being in a group of people with similar interests. Our participants also related similar motivators, with being in nature and physical activity being the most common.

Our current research provided valuable information about the experiences of older adult hikers through personal stories and pictures. Our sample size, however, is very small and therefore limited our analysis and conclusions. Some of the questions were not asked to every participant, further limiting the number of responses available for analysis. We plan to continue the research by interviewing more participants and possibly re-interviewing previous participants to obtain the necessary information, especially in the categories of home exercise routine, hiking
groups, and encouraging others to hike. We will also collect more pictures and responses to further analyze the photovoice component of our study.

Another limitation is that all of our participants were recruited from participating in Road Scholar. Road Scholar attracts a specific subset of older adults – those that can afford to travel and prefer to travel in groups. This population is likely not representative of older adult hikers as a whole. Many other older adults participate in hiking either through local groups or by themselves. Including these groups may provide different information regarding their motivations, benefits, and limitations.
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APPENDIX A: INTERVIEW QUESTIONS

The Road Scholar (Elderhostel) Hiking Experience
RECRUITMENT AND INTERVIEW GUIDE

INTRODUCTION (Recruitment): The purpose of this interview is to speak with you about your experiences with hiking, what you see as the benefits of hiking, and your reflections on the English countryside. I have asked you to participate because I am interested in the hiking experience of adults over age 55.

Please feel free to skip questions if you would like. The interview will last approximately one hour. Funding for this project is supported by the University Research Council as the University of North Carolina at Chapel Hill, NC.

INTEVIEW QUESTIONS

• Why did you decide to go on the hiking trip to England?

• How long have you been hiking/walking as part of your exercise? Why did you begin to walk or hike? What motivates you to continue to participate in hiking/walking activities?

• What do you feel are the benefits of walking or hiking? Challenges? Have you ever sustained an injury while walking or hiking?

• Where have you hiked? Can you describe some of the most exciting places you have walked/hiked?

• What do you experience when you are hiking or walking? Does the experience differ if you walk longer distances? At least 3 to 5 miles or more?

• When you are aren’t on extended hiking trips, do you walk or hike at home? Where? How often?

• Do you have a walking ritual? Do you have a particular route? Do you have a particular way that you prepare to walk? Do you walk with music or without? Do you walk alone or with someone?
• What kinds of thoughts, if any, do you have while you walk? Do you have a picture or two from your trip here that you would like to share? What does this picture mean to you?

• Have you participated in other hiking groups? Can you describe these groups?

• How do you find out about hiking groups and other opportunities?

• How would you describe your overall health? Has walking or hiking had an influence on your health? Can you describe any specific health benefits that you feel are related to your walking? (prompts: weight loss, increased energy, or improved blood pressure, cholesterol levels, or blood sugar levels)

• Do you participate in any other physical activities? Please explain.

• What suggestions do you have for encouraging other adults to begin hiking? What about to keep hiking?

• Do you mind telling your age or age range? Are you working or retired?

• Is there anything else that you would like to share about walking or hiking?
APPENDIX B: PHOTOVOICE QUESTIONS

I am interested to know why you chose this picture to share. What is important about this picture to you? (i.e. What made you chose this picture?)

Observation:

What images or aspects of the picture stand out?
What do you like about this picture?

Reflection:

How do you feel when you look at this picture?

Decision Making/Action:

How has this walking/hiking experience affected you and your future hiking experiences? Would you change anything about this hiking experience?
The one I picked had the background I liked, rolling hills, open spaces (a remembrance of fresh air, sunshine, and pure pleasure of being outdoors). It was also in another country, England, which I loved seeing.

It makes me happy to look at it, and I am in awe that I could hike 6 miles. I came from poverty and non-supportive parents (a nice way to put it). My life amazes me sometimes and I am grateful for what I have been able to do. Being active, seeing other places, and connecting to people (particularly being able to share these experiences with my husband). I still hike (walk) with a small group and consider it a pleasant way to spend time. I don't think I want to do 6 miles anymore now that I'm in my 70's. I just think it is great that I did it for several years. I
wouldn't change anything about my past hiking experiences. They increased my feelings that I was capable, strong, and "alive" and being active outdoors makes me feel that I still am.

[This picture] reminds me of one of the most challenging hikes that I have ever completed. The scenic view [stands out] and maybe the 40 lb pack that I was carrying across the swinging bridge. I feel tired when I look at this picture! [If I could change something], I would have camping gear like a larger sleeping bag and wider mat so that I got more sleep during the five day hike. Actually, I am reminded of how much enjoyment my younger son who was in the group of six friends got from the hike.
### APPENDIX D: THEMES CHART

<table>
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<tr>
<th>Basic Themes</th>
<th>Organizing Themes</th>
<th>Global Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• spend time with family</td>
<td>• Physical reasons</td>
<td>• Reasons for participating in hiking programs</td>
</tr>
<tr>
<td>• desire to travel to the location</td>
<td>• Psychological reasons</td>
<td></td>
</tr>
<tr>
<td>• the ability to hike at the level of difficulty presented</td>
<td>• Interpersonal/social reasons</td>
<td></td>
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<tr>
<td>• the need to travel during specific times of year</td>
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<tr>
<td>• positive past experiences with Road Scholar,</td>
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<tr>
<td>• past experiences in the country traveled</td>
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<tr>
<td>• health benefits,</td>
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<td>• exercise,</td>
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<tr>
<td>• the scenery, in support of spouse,</td>
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<tr>
<td>• relaxation,</td>
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<td>• meditation,</td>
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<tr>
<td>• convenience,</td>
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<tr>
<td>• graceful aging, psychological benefits such as preventing depression,</td>
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<tr>
<td>• improving your overall well being and desire to eat healthy,</td>
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<tr>
<td>• stress avoidance,</td>
<td></td>
<td></td>
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<tr>
<td>• weight control, and improve stamina for other activities</td>
<td></td>
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</tbody>
</table>
| Individual benefits of hiking | • good health  
• physical and mental energy  
• decreased cholesterol  
• decreased blood pressure  
• musculoskeletal benefits such as improving function following orthopedic surgeries  
• stress reduction  
• weight control  
• improvement of sinus/breathing issues | • Decreased health problems  
• Overall physical well-being  
• Improvement in mental functioning  
• Reduced stress | • Individual benefits of hiking |
|---|---|---|---|
| • Hiking preparation  
• The Actual hiking trip  
• Activities while hiking  
• Companionship while hiking | • stretching  
• putting on hats/sunglasses, bug spray, etc  
• Packing water/snacks.  
• No preparation  
• Time of day hiking  
• Length of hike  
• Listen to music/talk radio (1 female)  
• Meditate/pray (2 females)  
• Talk to others (1 male, 1 female)  
• Enjoy scenery (3 females, 1 male)  
• Solve problems (2 males, 1 female)  
• Determine distance traveled (1 male)  
• Hike with spouse (3 females, 2 males)  
• Hike with group (4 females, 3 males)  
• Hike alone (4 males, 3 females) | • pursuing self actualization  
• goal of hiking  
• stress reduction | • The psychological experience of hiking |
| • being one with nature  
• experiencing a sense of euphoria  
• feeling free  
• goal oriented  
• experience oriented  
• therapeutic  
• hiking philosophy | | | |
<table>
<thead>
<tr>
<th>Climbing very tall peak</th>
<th>High level of difficulty</th>
<th>Memorable hikes</th>
</tr>
</thead>
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<tr>
<td>Depends on time of day, weather, and whim</td>
<td>Positive social experience</td>
<td>England and Italy</td>
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<tr>
<td>Italy – very social hiking</td>
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<td>Goal oriented trips</td>
<td>Other Road Scholar trips</td>
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<td>Backpacking trips – many to sierras, alps, grand canyon</td>
<td>Scouting trips</td>
<td>Backpacking trips – many to sierras, alps, grand canyon</td>
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<td>Road trips to visit family</td>
<td>Local hiking trips</td>
<td>Road trips to visit family</td>
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<td>Local hiking trips</td>
<td>Cycling (5 males, 2 females)</td>
<td>Local hiking trips</td>
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<td>Water aerobics (2 female participants)</td>
<td>Other physical activities</td>
<td>Cycling (5 males, 2 females)</td>
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<td>Golf (1 male, 1 female)</td>
<td>Exercise frequency at home</td>
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<td>Yoga (1 male)</td>
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<td>Golf (1 male, 1 female)</td>
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<tr>
<td>Gardening/yard work (2 males, 1 female)</td>
<td></td>
<td>Yoga (1 male)</td>
</tr>
<tr>
<td>Cross country skiing (1 male)</td>
<td>Exercise regularly (4 male, 4 female)</td>
<td>Gardening/yard work (2 males, 1 female)</td>
</tr>
<tr>
<td>Tennis (1 female)</td>
<td>Exercise inconsistent (2 male, 1 female)</td>
<td>Cross country skiing (1 male)</td>
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<td>Exercise regularly (4 male, 4 female)</td>
<td></td>
<td>Tennis (1 female)</td>
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<td>Exercise inconsistent (2 male, 1 female)</td>
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<td>Exercise regularly (4 male, 4 female)</td>
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<tr>
<td>Difficulty starting a hike</td>
<td>Other physical activities</td>
<td>Exercise inconsistent (2 male, 1 female)</td>
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<tr>
<td>Flat-footed with extreme pronation</td>
<td>Exercise frequency at home</td>
<td>Difficulty starting a hike</td>
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<tr>
<td>Remaining injury-free</td>
<td></td>
<td>Flat-footed with extreme pronation</td>
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<tr>
<td>Snapped quadriceps tendon while hiking</td>
<td>Concerns with hiking</td>
<td>Remaining injury-free</td>
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<tr>
<td>Strained/torn ligament while hiking</td>
<td>Injuries while hiking</td>
<td>Snapped quadriceps tendon while hiking</td>
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<td>Chronic health issues</td>
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<td>Rotator cuff tear</td>
<td>Arthritis in hip, knee</td>
<td>Minor falls while hiking</td>
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<td>Pain in knees</td>
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<td>Lower extremity swelling</td>
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<td>Toe surgery</td>
<td>Circulation issues</td>
<td>Lower extremity swelling</td>
</tr>
<tr>
<td>Knee arthroscopy</td>
<td>Cancer</td>
<td>Toe surgery</td>
</tr>
</tbody>
</table>

**Concerns with hiking:**
- Injuries while hiking
- Chronic health issues

**Health issues and injuries:**
- Arthritis in hip, knee
- Bilateral knee replacements
- High cholesterol
- Circulation issues
- Cancer

**Other physical activities:**
- Cycling (5 males, 2 females)
- Water aerobics (2 female participants)
- Golf (1 male, 1 female)
- Yoga (1 male)
- Gardening/yard work (2 males, 1 female)
- Cross country skiing (1 male)
- Tennis (1 female)
- Exercise regularly (4 male, 4 female)
- Exercise inconsistent (2 male, 1 female)
| • Heart attack  
| • Back problems  
| • Bilateral hip replacements (2 participants)  
| • Heat intolerance |  
|  |  
| • Social benefits,  
| • creatively stimulated  
| • beautiful world  
| • think and feel about things in new ways  
| • work out problems  
| • Live by example  
| • Encourages others to get out and do something (social aspect) | • Discuss physical and psychological benefits of hiking  
| • Live by example  
| • Encourage social exercise | • Encouraging others to hike |  
|  |  
| • Road Scholar  
| • Local organized groups  
| • Local informal groups | • Hiking groups |