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AN EXPLORATION OF SERIOUS LEISURE TYPES, FLOW AND SUCCESSFUL AGING
IN LATER LIFE

BY

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THESIS

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ABSTRACT

This study examined how different types of serious leisure activity are associated with experiencing flow and successful aging. Older adults ages 60 and over participated in this study and participants were recruited from senior related programs in the Champaign County area. In all, 162 surveys were distributed in total and among them, 113 surveys were used in this study because some people completed the survey incorrectly or did not answer some questions. Cluster analyses were used to classify the types of serious leisure activity. Then, univariate analysis of covariance (ANCOVA) was used to examine the differences among the different serious leisure types regarding flow and successful aging. Thereafter, the relationship between flow and successful aging was investigated with multiple regression. Serious leisure was classified into five different clusters: 1) physically and socially-centered stimulating activity, 2) cognitively-centered stimulating activity, 3) diversely low stimulating activity, 4) diversely high stimulating activity and 5) cognitively and socially-centered stimulating activity. While there were some significant differences between different types of serious leisure activity regarding seriousness of leisure activity and frequency of flow, the results indicated that there was no significant difference in terms of quality of flow and successful aging. Also, results indicated that the quality of flow accounts for variance in successful aging. These study results offer some insights regarding older adults' serious leisure and their relationships to flow and successful aging.

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CHAPTER 1

INTRODUCTION

According to the Population Division of the Department of Economic and Social Affairs (2002), the aging population is growing dramatically. Until 1950, the aging population was only 8 % of the total population and even in the year 2000, it was 10% of the total population. However, they expect it to reach 21% in 2050. Generally, most developed countries define an older adult as a person who is over 65 years old (World Health Organization, 2010). However, due to advancement in medicine and technology, our life expectancy keeps rising. According to World Health Statistic (WHO), global life expectancy of both sexes will reach 70 soon (World Health Statistic, 2010). Not only that, the leading group of American baby boomers (people born between 1946 – 1964) will turn 65 in 2011. Obviously, society will experience a rapid increase of older people and this will have many implications for the use of health and social services, and general consumer behavior.

Naturally, many countries are sensing the challenges (e.g., health care use, disability, quality of life) related to the rapid growth of the older population or may be already facing challenges related to older adults. There are many possible pathways to aging. The first of these aging pathways is normal aging. Atchley (1989) defined normal aging as a general process of human aging. As people get older, they are involved in an aging process from which no one can escape. For example, people have less efficient organs, loss of peripheral vision, loss of hearing acuity, reduced muscle mass, dry and wrinkled skin, and so on. In other words, people who go through normal aging could have diseases, but not major physical or mental diseases that disable their everyday life. On the other hand, pathological aging defined as those “who cannot meet

their needs, because they are disabled or poor” (Atchley, 1989, p.184). For example, a person who cannot walk by himself because of severe arthritis or major disabilities is going through pathological aging.

Another aging process that people pursue is successful aging. Rowe and Kahn (1987) proposed three dimensions of successful aging. The first dimension is avoiding disease and disabilities. According to the Centers for Disease Control and Prevention statistics in 2005, 133 million Americans, almost half of the older adults of America, had at least one chronic illness (CDC, 2010). Thus, dealing with health problems is really important to aging successfully. The second dimension of successful aging is maintaining high cognitive and physical function. There are normal decreases in cognitive and physical functioning with increasing age such as working memory, hearing, and vision. However, maintaining functional ability to engage in enjoyable activities is an important aspect of successful aging. The last dimension of successful aging is engagement with life. Not only being physically healthy but also having an active life is important for successful aging. For example, many scholars have mentioned that social interaction has positive impacts on wellbeing (Burnett-Wolle & Godbey, 2007; Lemon, Bengston & Peterson, 1972; Longino & Kart, 1982).

Among aging theories, some theories are related to leisure and aging. First of all, Activity theory was introduced by Havinghurst and his associates in 1963 (Meiner, 2011). This theory asserts that being physically and socially active will have a positive effect on life satisfaction in later life, while disengagement theory emphasizes that people are willing to withdraw from social activity as they get old to prepare their final disengagement with society, death (Meiner, 2011). Indeed, many researchers already have been connecting activity theory with leisure. Lemon, Bengtson, and Peterson (1972) highlighted the positive relationship between informal

activity and successful aging. Also, Rodriguez, Latkova, and Sun (2008), investigated 633 residents in a Midwestern community to understand the relationship between leisure and life satisfaction. In this study, respondents who participated in three activities (jogging/walking, weight lifting, and visiting friends/relatives) showed high life satisfaction, while participants who enjoyed playing computer games reported low life satisfaction. Even Rowe and Kahn (1997) mentioned in their study that active engagement is one of the three key factors of successful aging. Although activity theory has been well used in many research studies, it also has some limitations. For example, what if an individual does not like to be active? Being active might possibly cause a person stress rather than high life satisfaction, if the person does not like to be active.

In response to the limitations of activity theory, Continuity theory was developed by Robert Atchley in 1971. Basically, continuity theory suggests that a person's degree of success in aging is determined, not by his level of activity, but by the function of adaptation and adjustment that has been developed over the course of one's life. In other words, aging does not have to follow a specific pattern of activity in order to be considered successful aging because patterns are linked with the individual's personality (Janke & Der Ananian, 2010). Indeed, continuity theory is commonly used in the leisure and aging field (Godbey, 1999; Mannell & Kleiber, 1997). However, this theory also has limitations; for example, it only can apply to people who are experiencing normal aging (Atchley, 1989). For instance, if an individual who enjoyed climbing mountains has arthritis, he might need to change his leisure activities to adjust to his situation to manage the symptoms and limitations. Thus, selection, optimization, and compensation (SOC) was introduced to better understanding how people self regulate and adapt to age successfully. SOC is increasingly used in variety of fields such as gerontology, human

development, and psychology to understand older adults' behavior (Baltes, 2003; Baltes & Carstensen, 1999; Lawton & Schaie 1991; Schaie & Willis, 2002). Selection, Optimization, and Compensation theory can be defined as “the processes that people use to reach goals under increasing limitations in resources” (Baltes & Baltes, 1990; Baltes & Carstensen, 1996, p. 399). Selection refers to choosing something by considering the limitations of one's resources, such as decreased energy, little time, and limited physical ability. For example, if one loves deep sea fishing, but it takes too much time and energy, and then he might go fishing in a lake that is close to home instead of going deep sea fishing. Optimization is process of maximizing what one has chosen. For example, since the lake is close to one's home, he could take his family fishing so that he could enjoy his hobby and also have time with his family. Compensation is the process of adapting to limitations that interfere with goals (Burnett-Wolle & Godbey, 2007). For example, since he loves sea fishing, he could rent a boat and fish on the water so that he could feel like he is fishing on the sea. In short, these theories show how aging theories can be adapted to leisure in later life.

Another area of interest to leisure researchers is the concept of serious leisure, which is being increasingly linked in the literature with well-being and life satisfaction. Serious leisure was introduced in our field in 1973 by Robert Stebbins. He defined serious leisure as “the systematic pursuit of an amateur, hobbyist, or volunteer core activity that is highly substantial, interesting, and fulfilling and where, in the typical case, participants find a career in acquiring and expressing a combination of its special skills, knowledge, and experience” (Stebbins, 1992, p.3). According to Stebbins, serious leisure contains six different qualities: perseverance, career development, significant effort, personal and social benefits, unique ethos, and expression of self and identity (Stebbins, 1992). Considering serious leisure's definition, qualities and the fact that

older adults typically have more free time due to retirement, many older adults could be engaged in serious leisure. Also, there is a quote that *“the more you invest in the activities that you choose to participate in, the more you get out of them”* can support this idea. Hence, participation in serious leisure activities could be important to age successfully. In fact, a few researchers have begun relating serious leisure with wellbeing and life satisfaction too (Brown, McGuire, & Voelkl, 2008; Heo & Lee, 2010; Heo, Lee, McCormick, & Pedersen, 2010; Mannell, 1993). For example, in an article by Brown, McGuire, and Voelkl (2008), shag dancers mentioned that participating in shag dancing helps them keep active, provides a sense satisfaction with their life, and increases their social network, which are all important factors of successful aging. Furthermore, serious leisure does not encourage a specific activity and any activity could be a serious leisure activity. Thus, it might be natural and wise to select and focus on the few activities for older adults.

Serious leisure is related to not only successful aging, but also experiencing flow. Flow is an optimal state of experience in which an individual feels cognitively efficient, deeply involved, and highly motivated with a high level of enjoyment (Csikentmihalyi, 1975, 1990). State of flow mostly occurs when an individual is intensely focused on an activity in which the person’s skill level and the challenge of the activity are balanced (Csikentmihalyi, 1975). Also, Mannell (1993) asserted that people are likely to experience flow when they choose leisure activity freely and when they are committed to leisure activity. Serious leisure also should be freely chosen leisure activity and it requires perseverance to overcome difficulties like boredom, anxiety, and frustration, as well as significant effort. Thus, we could suspect serious leisure has a relationship with experiencing flow.

In addition to serious leisure, there is a connection between the concept of the experience of flow and successful aging (Asakawa, 2010; Brancato, 2009; Collins, Sarkisian, & Winner, 2009; Csikszentmihalyi & Hunter, 2003). For example, Collins, Sarkisian, and Winner (2009) mentioned that since a characteristic of flow is the ability to be highly engaged in daily activities, the capacity and opportunity to experience flow would positively influence successful aging. Moreover, in Fritz and Avsec's (2007) study, experiencing flow played an important role as a predictor of subjective well-being, especially in the emotional aspect, so it is plausible that experiencing flow could have a positive influence on successful aging.

Several researches have investigated the influence of serious leisure on flow or flow on successful aging (Asakawa, 2010; Brancato, 2009; Brown, McGuire, & Voelkl, 2008; Collins, Sarkisian, & Winner, 2009; Csikszentmihalyi & Hunter, 2003; Heo & Lee, 2010; Heo, Lee, McCormick, & Pedersen, 2010; Mannell, R.C., 1993). However, few researchers have focused on these three concepts simultaneously: serious leisure, flow, and successful aging. Therefore, the purpose of this study is to understand how different types of serious leisure activities could shape not only flow, but also successful aging. Therefore, the following research questions will be explored in this study:

- 1) What are the characteristics of older adults' serious leisure activities in terms of physical, cognitive, and socially stimulation?
- 2) Are there differences in the degree of seriousness among the different serious leisure activity groups?
- 3) What is the relationship between different types of serious leisure and frequency of flow and quality of flow?

- 4) What is the relationship between different types of serious leisure and successful aging?
- 5) Does frequency of flow and quality of flow influence successful aging?

The outcomes of this study will help researchers understand which types of serious leisure are related to experiencing flow and successful aging. This study will also offer insights into how experiencing flow affects successful aging. To older adults who are going to have much free time, insights from the results of this exploratory study will help identify strategies for successful aging.

CHAPTER 2

LITERATURE REVIEW

This study attempts to understand how serious leisure affects flow and successful aging of older adults. This literature review consists of three interrelated sections: the first part focuses on understanding serious leisure, including the meaning of serious leisure and why it is important for older adults; the second section defines the term flow and examines its relationship to serious leisure; the final section defines successful aging and examines how flow and serious leisure impact successful aging.

Types of Leisure

According to the serious leisure perspective by Stebbins (1974), leisure can be divided into three main forms: project-based leisure, casual leisure, and serious leisure.

Project-based leisure. Stebbins has defined project-based leisure as follows: Project-based leisure is a short-term and infrequent creative undertaking carried out in one's free time. It requires considerable planning, effort, and sometimes skill or knowledge, but it is neither serious leisure nor intended to develop into such (Stebbins, 2005, p.2). Also, it requires considerable planning, and effort and sometimes skill or knowledge (Stebbins, 2005). Project-based leisure can be divided into one-time projects or occasional projects. The goal of one-time projects is to perform it successfully. Most one-time projects allow people to pursue them without preparation, using one's present ability; however, at times, the project may require small preparation such as learning a new piece of information or a new technique. Making sculptures, taking a

backpacking trip, volunteering at sports events, or making home videos are examples of one-time projects (Stebbins, 2005). On the other hand, occasional leisure projects are motivated by an agreeable obligation more than oneself (Stebbins, 2005). In other words, a leisure activity does not require only personal interest but may occur during special occasions as well. For example, decorating the house during Christmas season or for someone's birthday occurs because it is special occasion, not just because of a personal interest. The biggest difference between occasional projects and one-time projects is that occasional projects occur regularly like Christmas or birthdays.

Casual leisure. More researchers have studied casual leisure and serious leisure (Bendle & Patterson, 2008; Jones & Symon, 2001; Patterson & Pegg, 2009; Silverstein & Parker, 2010; Stebbins, 1997, 2001). In the 1980's, when the serious leisure perspective first emerged, casual leisure operated as a supplemental concept to help understand serious leisure. Now, however, casual leisure is considered an important part of contemporary leisure studies (Stebbins, 1997). Casual leisure is defined as "the immediately, intrinsically rewarding, relatively short-lived pleasurable core activity, requiring little or no special training to enjoy it" (Stebbins, 1997, p.17). Stebbins argues that casual leisure has six types: play, relaxation, passive entertainment, active entertainment, sociable conversation, and sensory stimulation. First of all, Kelly (1990) suggests that play is generally considered an activity of children and compares it to 'childlike' behavior in adults, which is intrinsically motivated. According to Huizinga (1950), play is defined as free activity that stands outside of ordinary life and is not serious but absorbs players' attention. Secondly, relaxation is the behavior of releasing oneself from mental or physical tension. Sitting on the couch, lying on the bed, or napping is common examples of relaxation. Thirdly, passive

entertainment is a casual leisure activity. The most popular example of passive entertainment is watching TV. People who participate in this kind of leisure activity do not need to do anything but wait for passive entertainment to amuse them. Fourthly, active entertainment requires proactive effort in order to entertain oneself, which is the opposite of passive entertainment. For example, unlike watching TV or listening to the radio, puzzles, board games, or party games require physical or mental energy and are considered active entertainment. Fifthly, social conversation is another important form of casual leisure. Social conversation occurs while meeting with friends at a coffee shop or talking with people in public areas such as on a bus, in an airplane, or while in a waiting room. The last form of casual leisure is sensory stimulation. There are five types of sensory stimulation: creating pleasure, displaying beauty, satisfying curiosity, feeling thrills of movement, and deviant activity. For example, people create pleasure through sex or eating. The display of beauty is found in nature, art, and fireworks. People may satisfy their curiosity by window-shopping or touring museums and the thrill of movement can occur through raft rides and bungee jumping (Stebbins, 1997). However, these six types of casual leisure usually do not occur alone. Among the six types of casual leisure, at least two or three types occur together. For example, we believe watching TV is passive entertainment, however, it also could include relaxation and a social conversation with friends and family.

Serious leisure. In contrast to casual leisure, serious leisure is defined as “the systematic pursuit of an amateur, hobbyist, or volunteer activity sufficiently substantial and interesting for the participant to find a career there in the acquisition and expression of a combination of its special skills, knowledge, and experience” (Stebbins, 1992, p. 3). Stebbins (1992) mentions six distinct qualities of serious leisure: perseverance, leisure career, significant effort, durable

outcomes, unique ethos, and strong identification. Perseverance seems to be one of the most important serious leisure qualities that separate it from casual leisure. Brown, McGuire, and Voelkl (2008) claim that shag dancers, who are considered serious leisure participants, show perseverance while participating in a shag dance. They needed to overcome frustrations, challenges, and fatigue, which can occur during the initial stage of shag dancing, in order to become serious leisure participants.

The next quality of serious leisure is leisure career. Leisure career indicates that serious leisure participants follow a career-style trajectory in which they start at a beginning stage of experiencing the leisure activity, increase their involvement, and eventually retire from participation and use of skills. Significant personal effort is the third quality of serious leisure. Gillespie, Leffler, and Lerner (2002) interviewed 61 dog sports participants in their study. Participants in this study mentioned that they even have to take some time off from their work for their dogs, since it demands a huge amount of time. Another quality of serious leisure is that it has durable outcomes. Durable outcomes include benefits individuals could earn while doing serious leisure activities, such as feeling of accomplishment, self-actualization, self-Enrichment, and physical health. According to Kane and Zink (2004), serious kayakers not only experience a sense of achievement, stress relief, and skill acquisition, but they also have a chance to socialize and share kayaking experiences with other kayakers. In terms of outcomes, serious leisure has even shown to have positive effects on the rehabilitation process of people with disabilities (Kleiber, 1996). He asserted that serious leisure helps to reconnect with oneself that was temporarily detached from one, or setting a new direction for a new self (Kleiber, 1996). Patterson (1996, 2000) pointed out that serious leisure could play a similar role as work for people who are unemployed because of disabilities. The fifth quality of serious leisure is unique

ethos. When someone is deeply involved in an activity, one is inclined to talk about the activity often and feel a sense of kinship with others who enjoying the activity. In this moment participants share their unique cultures or interests with other serious leisure participants. The last quality is identity formation. Serious leisure participants form a strong personal identity rooted in their chosen leisure activity. Participants often feel that their particular serious leisure activity represents them and they demonstrate pride in their activity. According to Brown et al (2008), by participating in shag dancing, participants have an opportunity to form identity as well as identity affirmation and let shag dance play major role in their lives.

However, not all the scholars agree with Stebbins' idea that serious leisure and casual leisure are clearly distinguished concepts. Shinew and Parry (2005) argue that college student drinking and the use of illicit drugs could be included not only in casual leisure but also serious leisure categories. Generally, drinking and drug use falls into the sensory stimulation category of casual leisure. However, Shinew and Parry (2005) asserted that college students who enjoy drinking and using illicit drugs demonstrate qualities of serious leisure too. For example, they spend significant time drinking and using drugs, feel a strong ethos with their peers, and believe they achieve benefits from drinking and using illicit drugs such as building friendships. Brown (2007) also claimed that leisure does not clearly divide into serious and casual categories. People who participate in shag dancing not only realize the benefits of serious leisure, but also the casual benefits such as social interaction, a sense of belonging, self-gratification, and pure fun. For these reasons, Shen and Yarnal (2010) argue that serious leisure and casual leisure are not distinctly separate but can be seen as a linear relationship as qualities of serious leisure and casual leisure are found in both leisure categories.

Although, many scholars, especially Stebbins, still differentiate casual leisure and serious leisure and actively investigate serious leisure (Hastings, Kurth, Schloder, & Cyr, 1995; Heo & Lee, 2010; McQuarrie & Jackson, 1996; Yoder, 1997). Furthermore, it seems that there is more interest in studying serious leisure among older adults. According to U.S Census Bureau of Labor Statistics in 2007, the average retirement age is 62. It has decreased in the past 100 years because of many socioeconomic factors. Life expectancy in the US, however, is increasing and reached 77.9 in 2007 (U.S. Census Bureau, 2008). In short, older adults these days have longer retirement years than any other generations thus far. Therefore, since baby boomers are retiring and likely have more free time, there is a greater opportunity for leisure to be pursued. Especially, Stebbins (2001) asserted that serious leisure could play a pivotal role in the lives of people with no work or only part-time work. He posited that serious leisure is the only remaining area in life where they can find an identity related to their distinctive personal qualities. The qualities expressed in serious leisure may be more important for people who are not working (Stebbins, 2001). In addition, serious leisure has physical benefits for older adults as well. Froelicher and Froelicher (1991) mentioned that serious leisure often incorporates physical activity, which has been linked to cardiovascular benefits such as reduced resting heart rate (Froelicher & Froelicher, 1991). Also, Heo and Lee (2010) found in their study that 90.7% of older adults who participate in serious leisure, like, senior games, consider themselves in “excellent” or “good” health. Moreover, people who participate in serious leisure activity can increase their self-confidence by getting recognition from others (Patterson & Pegg, 2009). Furthermore, Mannell (1993) and Stebbins (1997) mentioned that serious leisure participants have a greater chance of experiencing more frequent happiness.

Overall research indicates that even though serious leisure is not as clear cut as casual leisure, people who pursue serious leisure achieve a number of benefits such as better health, a reduction in feelings of emptiness, and a feeling of accomplishment and so on. Thus, serious leisure could play a critical role, to especially older adults. Also, there is some indication that engaging in serious leisure can also be related to flow. Therefore, a literature review on flow follows.

Flow

Mihaly Csikszentmihalyi developed the concept of 'Flow' in his 1975 study. After participants in his interviews described their optimal experiences using metaphors of water, Mihaly Csikszentmihalyi came up with term 'Flow'. Mihaly Csikszentmihalyi has defined flow as a state of mind that amounts to absolute absorption in an activity which results in an experience a genuinely satisfying state of consciousness (Csikszentmihalyi, Harper, & Row, 1990). Thus, they considered the state of flow as optimal experience: a time when people feel deep concentration and enjoyment. Csikszentmihalyi, Harper, and Row (1990) identified eight features of flow. First of all, people fall into a state of flow when their ability matches the task's difficulty. When a task is too difficult to handle, people feel frustration instead of flow; in contrast, when a task is too easy for their ability, people feel bored instead of experiencing flow. People experience flow when their task and ability correspond to one another, while people feel indifferent if the task and ability are both low. Secondly, people experience flow when their action and awareness merge together. In other words, if your action and awareness do not go together, you would be distracted and could not be in the flow state. For example, let us assume you are doing what you really dislike, then you would have less chance to experience flow,

because you probably thinking to yourself: “I do not want to do this,” which would differentiate your awareness from action so that it prevents you from experiencing flow.

Thirdly, clear goals lead people to experience flow. When people have clear goals, they can focus on the goal and experience flow more easily. Fourthly, giving feedback also helps people to experience flow. When people get quick feedback, it helps them to determine what their next action should be to reach their goals, and this can help them reach the state of flow. The fifth feature of flow, concentration, enables flow. In fact, having clear goals and receiving quick feedback all relate to concentration. This is because clear goals and quick feedback help high concentration on the task and help one to experience flow. Control is the sixth feature of flow. While people normally do not like being controlled by something, when they can control the difficulty level of a task or a decision in their life, they are closer to experiencing the state of flow. Imagine you are playing basketball on a court in a close match. On the court, you sense that even a small move could have a big impact on the game, and you gradually realize that the game is flowing as you expected, and you feel like you are controlling the game. This is a moment when one would feel control and it leads to experience flow.

In flow, people experience a loss of self-consciousness too. In Korean, the term “Mo-A-Ji-Kyung” describes a trance state similar to flow. It denotes a state when people temporarily forget their existence because they are so deeply involved in something. Experiencing loss of self-consciousness is similar to flow, and people could experience this state when we are fully focused on something. Flow can also be described as not feeling time pass. People may experience this when talking with a lover or while on vacation. During moments like this, people experience flow.

Types of flow. Flow can be further divided into passive and active flow. Passive flow occurs through the environment around a person rather than a person's willingness. For example, when people have to focus on something because of a deadline, they experience passive flow. This kind of flow frequently happens during work time. On the other hand, active flow occurs when one acts as an agent of activity and focuses one's energy on solving something. Being in love or enjoying a favorite leisure activity is popular examples of active flow. For these reasons, many people who experience passive flow have a lower satisfaction than people who experience active flow. Accordingly, it might be expected that people experience active flow more often than passive flow. Surprisingly, however, Csikszentmihalyi (1989) insisted that people experience flow more easily during work than leisure. According to flow theory, this is because flow is more likely to occur in more intense and complex structured environments (Moneta & Csikszentmihalyi, 2006). It is true, however, that active flow is beneficial for people in the long run because passive flow can at times be accompanied by stress, so people can have a bad impression of flow so that people might try to avoid it (Hwang, 2007). For example, when you have to finish critical work in a few hours, it might make you focus on the task and lead experiencing flow. However, since this is really a stressful experience, you might not want to do it again.

In addition, flow can also be categorized into activity-based flow and thinking-based flow. Activity-based flow is the flow we experience by doing activities such as sports. By playing chess or bridge, however, one could experience thinking-based flow, which requires thinking more than physical activity. According to Hwang (2007), activity-based flow is easier to experience than thinking-based flow. This is because most activity-based flow provides quick feedback and with few difficulties. For example, when you are playing baseball, players in the

field give quick and different feedbacks each time, right after ball leaves from pitcher's hand. Since thinking-based flow does not give immediate feedback, however, it is more difficult to fall into a flow state. The thinking-based flow state exerts comparatively less physical energy than a physical-based flow state, so that an individual can maintain the thinking-based flow state longer and experience higher flow intensity (Hwang, 2007). Putting all this information together, it is probable that the frequency of flow could be different according to the types of leisure activities in which one participates.

Serious Leisure and Flow

It seems like serious leisure is an ideal environment for one to experience flow. Csikszentmihalyi (1975) mentions that flow is experienced when people are intensely involved in an activity, so they seem as if nothing else matters to them. Also, we easily assume that to be intensely involved in an activity, we need to love the activity or that it must be important to our lives. A few researchers have mentioned the relationship between serious leisure and flow. Csikszentmihalyi (1990) mentioned in his study that activities that require commitment, discipline, and effort are more likely to provide the experience of flow. Moreover, Stebbins (1992) stated that serious leisure is a more plausible environment to experience flow than casual leisure and sees a more intimate relationship between serious leisure and flow. In addition, Kelly and Freysinger (2000) and Mannell, Zuzanek, and Larson (1988) claim that since serious leisure activities need high levels of commitment, it could more likely lead people to experience flow. Not only that, Mannell (1993) found in his study that participants are more likely to experience a high quality of flow when they are extrinsically motivated rather than intrinsically motivated. This result seems unexpected, since most of people think that flow could be experienced more

often when people are intrinsically motivated. This is because participants rather choose relaxing and less challenging leisure activities simply for their own immediate enjoyment when they have no external commitment or obligation. Also, Csikszentmihalyi (1989) pointed out that people experience flow more often during work than leisure, since flow is more likely to occur in more intense and complex structured environments. Thus, Mannell (1993) suspected that participating in serious leisure, which is freely chosen and committed leisure activity, has a greater chance to experience flow.

As previously mentioned, one of the features of serious leisure is putting significant effort into the leisure activities so that serious leisure participants can be intensely involved in the activity. In Brown and his colleagues' study (2008), thirty-one shag dancers were interviewed to understand how engaging in serious leisure could give participants opportunities for successful aging. Some participants mentioned that they invested a large amount of time and effort in shag dancing. Even one of the participants in this study mentioned that even though one lesson consists of four classes, since he wanted to learn and master it, he repeated the same lesson 20 times. In Brown's (2007) other study, the shag dancers' practice times ranges between 8 and 18 hours a week, before a dance contest. Heo and Lee (2010) noted that Senior Games participants require significant efforts and skills as well. Actually, the respondents also mentioned that they have been participating in Senior Games for 6.7 years on average and trained 8.9 hours a week on average. Furthermore, participants in dog sports say that their lives are more focused on their dogs than their own selves (Gillespie, Leffler, & Lerner, 2002). For example, serious dog sports participants buy their cars to get to dog shows, all the walls are covered with the dog pictures, and they put their dog before everything, even their family or friends.

Even though flow seems to share some qualities with serious leisure, not all the study results show the significant relationship between serious leisure and flow. Stebbins (2010) noted that serious leisure activities, like the liberal arts hobbies of reading or researching do not seem to require one's control while doing these activities. Thus, he does not agree that all serious leisure activities bring about the flow. Also, Heo et al (2010) studied 22 older adults to investigate the relationship between serious leisure and flow. Their results turned out to be negative: 36% of flow experiences occurred while doing house chores and 20% by doing relaxing activities such as watching TV or reading, which are generally considered as work and casual leisure. However, this study only used 22 participants, and since they overlooked other characteristics of flow such as not sensing passing time, having clarity of goals, and correspondence of task difficulties and ability, the study seems to require more investigation to offer a more veritable conclusion.

Successful Aging

As life expectancy has increased, successful aging has been attracting not only older adults' attention, but also the attention of most media outlets. The problem, however, is that it is difficult to define successful aging, since successful aging is dependent on people's value. Thus, it is natural that many researchers have different ideas about successful aging. Lawton (1983) emphasizes that four factors are necessary for successful aging. To start, he mentions behavioral competence, such as, health, perception, motor behavior, and cognition. If the first condition is focused on the physical aspect, the second condition is focused on the psychological well-being, feelings such as happiness, optimism, and an overall congruence between desired and attained goals. Thirdly, the author points out that a perceived quality of life is a subjective assessment of

family, friends, activities, work, income, and housing. Finally he talks about objective environments such as realities of housing, neighborhood, income, work, activities, etc.

However, Rowe and Kahn's definition is more prevalent than other definitions. They developed a more explicit definition of successful aging in 1997, which has been commonly used in the field until now. The authors emphasized three components, starting with low probability of disease and disease-related disability. This means not only that the probability of disease is low but also that the risk of disease is low. This is one of aspects that separate successful aging from usual aging. The authors suggest that another aspect of successful aging includes cognitive and physical functional capacity. Cognitive functional capacity includes what older adults can or cannot do, such as whether they can hear without problems or walk by themselves. The last component is the active engagement with life. Active engagement includes interpersonal relations and productive activity. Both occur through interactions with other people. Interpersonal relations, however, are association between people that produce emotions. On the other hand, productive activity is activity that creates productivity and has societal value, such as volunteering.

Even though Rowe and Kahn's definition is widespread in many fields, it does not mean that it is free from criticism, because it is almost impossible to avoid acquiring any diseases as you age. More than 80% of adults over 65 years old have at least one chronic disease, and almost 50% of adults over 65 years old have two chronic diseases (Centers for Disease Control and Prevention, 2003). Thus, even though older adults could have a high physical and cognitive functional capacity and active engagement in life, they could still not be considered as aging successfully when they have a disease. McLaughlin, Connell, Heeringa, Li and Roberts (2009) also pointed out that fewer people fit into Rowe and Kahn's definition as time goes by because

of increasing diseases and lower physical functioning, the definition needs to be modified. Furthermore, Crowther, Parker, Achenbaum, Larimore and Koenig (2002) asserted that the three components—low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life—are not enough to define successful aging. They mentioned the term positive spirituality. Positive spirituality includes religion and spirituality, and it involves developing and internalizing personal relations with the sacred or transcendent that is not bound by race, ethnicity, economics, or class and promotes the wellness and welfare of the self and others. (Crowther, Parker, Achenbaum, Larimore & Koenig, 2002, p.614).

Leisure and Successful Aging

Many researchers have been studying the relationship between daily-based activities and successful aging. Menec's (2003) longitudinal study on the relationship between everyday activities and successful aging demonstrate that participants who show greater activity level are more likely to have greater happiness, better cognitive and physical function, and reduced a mortality rate, which are three aspects of successful aging of Rowe and Kahn's definition. Also, Herero and Extremera (2010) investigated 150 Spanish older adults to study the relationship between self-esteem, optimism, daily activities and subjective wellbeing, and also how participating in daily activities mediate the effects of personality variables on the subjective wellbeing in older adults. The authors pointed out those daily activities, especially social activities, have a positive effect on one's well being; however, only social activities have a significant influence on the self-esteem and optimism that are important for subjective well-being. Many other researchers have mentioned the importance of participating in leisure and

being active later in life to enhance one's life satisfaction (Bowling, 2007; Nimrod, 2007; Silverstein & Parker, 2002; Thang, 2005).

Serious Leisure and Successful Aging

A few researchers also studying the relationship between serious leisure and successful aging. Brown, Mcguire, and Voelkl (2008) examine whether engagement in a serious leisure activity provides older adults' opportunities for successful aging. Thirty-one shag dancers were asked questions about the qualities of serious leisure—perseverance, leisure career, significant effort, personal benefits, unique ethos, and identity to find out how serious leisure qualities match with factors of well-being. They concluded that participating in serious leisure was positively associated with the indications of successful aging. Heo and Lee (2009) also showed how serious leisure and flow contribute to subjective wellbeing. Their results showed that serious leisure had a significant impact on subjective well being, while flow had a negative impact on subjective wellbeing. In addition, Mannell (1993) used the Experience Sampling Method (ESM) to examine the immediate cognitive response of participating in serious leisure and the way it related to life satisfaction. Participants showed a high level of satisfaction when they were investing in greater efforts in more of their daily activities, which can be considered as serious leisure. Of course, not all studies have demonstrated a positive relationship between serious leisure and successful aging. In Heo and Lee's (2010) study, participating in serious leisure did not show a significant relationship to life satisfaction, which is one of the important indicators of successful aging. However, since authors only considered affective attachment and behavioral consistency as serious leisure factors and did not include the other indicators of well-being such

as physical or mental health, it needs to be investigated further to understand the relationship between serious leisure and successful aging.

Flow and Successful Aging

Also, some studies have shown the relationship between successful aging and flow. Mostly, researches are focused on life satisfaction or happiness, which are widely used to measure aging successfully in the later years of life (Han, 1988). For example, Brancato (2009) described how he feels while participating in Tai Chi Chuan. He mentioned that the more he participates, the more he increases his body awareness, clears his anxieties and fearful thoughts, and feels free from the constrictions of mind and body. Asakawa (2010) showed in his study that a high frequency of flow had a positive impact on self-esteem, coping strategies, committing more seriously to one's work or school, and strengthening one's overall motivation to pursue a meaningful life. With these studies, we could assume that the term flow not only applies to a Western culture but also to Asian culture. Collins, Sakisian, and Winner (2009) try to understand not only the presence of flow, but also the quality of flow experience. While most of studies assume that the experience of flow leads to higher life satisfaction or happiness, this study emphasized the quality of flow over the frequency of flow. Actually, less frequency of flow had a more positive effect on happiness or life satisfaction than a high frequency of experiencing flow in this study. The authors pointed out that getting used to the flow experience could make people think experiencing flow as not special and this could affect the results. They further mentioned that experiencing flow sometimes does not always guarantee happiness or high life satisfaction.

Serious Leisure Types, Flow and Successful Aging

In summary, as the first baby boom generation becomes 65 in 2011, and life expectancy is keeps growing, it is critical to examine how our elder population can live successful and meaningful later lives. Aging theories like Activity, Continuity, and SOC theories stress the importance of being active, maintaining their lifestyle, and making the best out of circumstances. As the old adage says: *‘The more you invest in the activities that you choose to participate in, the more you get out of them,’* serious leisure could be one of the alternatives to help older adults live satisfactorily in later life. Indeed, many researchers have shown that serious leisure has a positive effect on successful aging (Brown, McGuire, & Voelkl, 2008; Heo & Lee, 2009; Kane & Zink, 2004; Mannell, 1993; Siegenthaler & O'Dell, 2003). Not only that, many mentioned the relationship between serious leisure and flow. Stebbins (1992) claimed that since serious leisure requires commitment, discipline, and effort, which are similar conditions to produce flow, flow is more likely to occur while participating in serious leisure. Furthermore, several studies have shown that flow is positively related to happiness and life satisfaction, which are important dimensions of successful aging (Asakawa, 2010; Brancato, 2009; Collins, Sakisian, & Winner, 2009).

So far, leisure activities have been divided into diverse ways. For example, Hickerson (2007) divided leisure into four different types: outdoor adventure activities (e.g., climbing, geocaching, and mountain biking); active competitive team sports (e.g., basketball, hockey, and football); active individual sports (e.g., golf, running, and tennis); passive activities (e.g., dining out, scrap booking, and television. Mannell (1993) also divided leisure into four different types: volunteer/home/family care activity (e.g., volunteer work, housework, and child care); self-care

(e.g., personal maintenance, using medical services); passive leisure (e.g., relaxing, reading, watching, television, and socializing); active leisure (e.g., exercising, hobbies, and games).

However, few researchers have tried to divide leisure according to its components. Stern and Munn (2010) and Verghese, Lipton, Katz, Hall, Derby, Kuslansky, Ambrose, Sliwinski, and Buschke (2003) roughly divided into physical activity and cognitive activity. However, Knoefel and Jankowiak (2011) divided into physical activity, cognitive activity, and social activity. In the present study, I asked participants how they think about their leisure activities, since leisure activities rarely include only one factor in each activity. For example, leisure activities like golf seem to be physically focused activities, however, the social factor also occurs during golf. Also, people could focus on different factors, even though it is same leisure activity. For example, while some people regard tennis as a physically stimulated leisure activity, others consider it to be a socially or cognitively stimulated leisure activity.

Based on the above relationships between serious leisure, flow and successful aging, the present study will divide types of serious leisure and investigate how these different types could relate differently to flow and successful aging in older adults in their later lives.

CHAPTER 3

METHODOLOGY

Setting and Sample

In this study, community-dwelling older adults ages 60 and over participated. To collect data, cluster sampling was used and the participants in this study were recruited through nearby senior related programs such as the Urbana Park District, Champaign Park District, Savoy Recreation Center, the University of Illinois Lifetime Fitness Program (LFP), and the Peace Meal programs (i.e., congregate meal) in Homer and Rantoul. Ultimately, all these programs share the same goal to improve or enhance older adults' health, well-being, and quality of life.

Data were collected from the above-mentioned senior programs and permission to access older adults was attained through the directors of each site. Respondents read and signed an informed consent form before filling out the questionnaire. The study was also approved by the University of Illinois Institutional Research Board (IRB). Specifically, researchers explained the purpose of the study, that there is no disadvantage for dropping out, and that there is no compensation for participating. Also, all participants were asked to complete the questionnaire on site. However, if anyone wanted to finish the survey at home, they had the option to do that and return it in a pre-addressed postage paid envelope.

Sample size. Since this study has strong characteristics of a pilot test, the minimum sample size was not considered critical. However, for the appropriate use of multiple regression analysis and ensure confidence in the results, the minimum sample size was calculated by using the below formula.

$$\text{Sample size} = \frac{n}{1 + \left(\frac{n}{\text{population}}\right)}, \text{ where } n = Z^2 \frac{P(1-P)}{c^2}$$

Z= Z value (e.g., 1.96 for confidence level of 95%)

P=percentage picking a choice (true portion of factors in population; 0.5 used for sample size required)

c= confidence interval (e.g., 0.5= ± 5)

In the U.S., the population of people who are age 60 and over is 45,797,200 (U.S. Census Bureau, 2000). If samples sizes were estimated at 95% confidence level, with choosing 95% and 90% for the confidence interval, the minimum samples sizes are below. Thus, the present study required 96 respondents as the minimum required sample size (Table 3.1).

Table 3.1.
Estimation of Sample Size

Confidence Interval	Confidence Level (%)	Population (n)	Sample Size Needed (n)
5 (95%)	95	45,797,200	384
10 (90%)	95	45,797,200	96

Also, a *priori* power analysis was used to estimate the minimum required sample size for multiple regression. This analysis estimates effect size, number of predictor variables, alpha level and desired statistical power. According to Cohen (1998, 1992), an alpha level of 0.05 and a desired power of 0.8 are recommended. In addition, he defined a small effect size to be $f^2=0.02$, a medium effect size to be $f^2=0.15$, and large effect size to be $f^2=0.35$. Table 3.2 shows the minimum required sample sizes for multiple regression analyses based on different effect sizes.

Table 3.2.
Minimum Sample Size for Multiple Regression

Effect Size	Alpha Level	Statistical Power	Number of Predictors	Minimum Sample Size
Small (0.02)	0.05	0.8	5	643
Medium (0.15)	0.05	0.8	5	91
Large (0.35)	0.05	0.8	5	43

*The number of predictors: control variables (3), flow related variables (2)

By using the medium effect size ($f^2=0.15$), the present study requires 91 respondents as the minimum required sample size for multiple regression analysis.

Description of sample. A total of 162 questionnaires were distributed to older adults. Overall, 141 questionnaires were completed and returned. Moreover, 28 more surveys were discarded for four reasons. First, 11 participants did not mention their serious leisure activity in the survey or answered questions regarding not one but several serious leisure activities, which has the potential to mislead the results. Secondly, 12 participants scored less than the mean on the Serious Leisure Inventory Measurement (SLIM) scale which was used as criteria of judgment to separate serious leisure participants from casual leisure participants. Thirdly, three participants did not answer the questions regarding how stimulating their leisure activities are therefore they could not be classified into any cluster. Finally, two cases with several outliers were discarded. Therefore, a total 113 surveys were used in this study, which yielded a response rate of 70%. A description of the sample is provided in Table 3.3. Most participants were female (68.1%), while 31.9 % were male. Among the 113 participants, a majority have a bachelor's degree or higher (graduate = 48.7 %, college/university = 33.7%) and the rest of participants reported they

completed middle school (.9%) and high school (14.2%). Regarding health, 68.1% of the participants reported they have no chronic diseases or disability, while 31.9 % have an illness.

Table 3.3.
Description of Demographics

	N	Min	Max	Mean	Std. Deviation
Age	113	60.00	96.00	73.22	7.03
	Frequency	Percent	Valid Percent	Cumulative Percent	
Gender					
Male	36	31.9	31.9	31.9	
Female	77	68.1	68.1	100.0	
Total	113	100.0	100.0		
Education					
Middle School	1	.9	.9	.9	
High School	16	14.2	14.2	15.0	
College/University	41	36.3	36.3	51.3	
Graduate School	55	48.7	48.7	100.0	
Total	113	100.0	100.0		
Illness					
No	77	68.1	68.1	68.1	
Yes	36	31.9	31.9	100.0	
Total	115	100.0	100.0		

Instrument

In this study, the questionnaire consisted of four sections: Demographics, serious leisure, flow, and successful aging. It took respondents approximately 20-25 minutes to complete. The following is a detailed description of the measures that were used in this study.

Demographics. Demographic information was collected including age, gender, education, race, work status, marital status, and illness. A total of six questions were included in

this section by asking one question for each variable. These variables were measured by checking one of the answers and used to describe samples. Also, several variables were used as control variables.

Serious leisure. To measure the serious leisure activities of participants, a new short form version of the Serious Leisure Inventory Measurement (SLIM) was used in this study. In fact, the original SLIM scale consisted of 72-items. The 72-item SLIM scale showed acceptable fit, reliability and validity across samples in a previous pilot test by using a q-sort, an expert panel, and confirmatory factor analysis (Gould, Moore, McGuire, & Stebbins, 2008). Forty graduate students who are in the leisure and recreation field participated in the q- sort and were asked to match each item with the definition provided from researchers. Then, items with high (80%~100%) consensus were retained while others were eliminated (Gould, Moore, McGuire, & Stebbins, 2008). Also, five experts were chosen and asked to review and critique each definition and item (Gould, Moore, McGuire, & Stebbins, 2008). In addition, according to fit indices of the confirmative factor analysis (CFA) for serious leisure models, the 72-items SLIM scale had a high CFI (0.91) and had a low RMSEA (0.04). This SLIM scale has a short form consisting of 54-items which was then reduced to an 18-items scale (Gould, Moore, McGuire, & Stebbins, 2008). Each of 18-items represent 18 dimensions of serious leisure that Gould and other researchers suggested (Gould, Moore, McGuire, & Stebbins, 2008). The 18-item SLIM has not been published yet, however, James Gould has examined the reliability and validity of this short form in a pilot study (J. Gould, personal communication, October, 4, 2011). Each question about each of the 18 dimensions demonstrated modest to high factor loadings (.559 - .887) and the

overall scale appears to have acceptable reliability. In the present study, the Cronbach's alpha was moderately high at .865 for the SLIM short form.

The new SLIM short form has a total of twenty-two questions including 18 questions that represent the 18 dimensions of serious leisure. For this scale, respondents were asked to list up to three favorite free time activities they considered serious (Appendix C) and then were instructed to select one of these three activities.

Then, for the selected activity, respondents were asked how physically, cognitively and socially stimulating the activity is on a 5-point scale where 0=not at all stimulating, 1=slightly stimulating, 2=moderately stimulating, 3=quite a bit stimulating, and 4=very much stimulating.

The following questions are examples of items from the new SLIM short version: 1) I overcome difficulties in _____ by being persistent; 2) I try hard to become more competent in _____; 3) I feel that I have made progress in _____; and 4) There are defining moments within _____ that have significantly shaped me. Respondents were asked to check on a 9-point Likert scale ranging from "completely disagree" to "completely agree", which best represents their feelings and beliefs about serious leisure activity. An overall mean score for all 18-items was calculated and represents how serious respondents are in their one selected leisure activity. Serious leisure participants were distinguished from casual leisure participants by comparing a composite score of the scale with median score of the scale, 72 ($18 * 8 / 2$). Consequently, the participant's mean score of the SLIM was 113.01 and the range of mean was 77 to 144 with a standard deviation of 16.05.

Presence of flow. Csikszentmihalyi's (1982) flow questionnaire was used to measure presence of flow. In his scale, two descriptions of flow were provided: 1) I am so involved in

what I am doing. I don't see myself as separate from what I am doing; and 2) My mind isn't wandering. I am not thinking of something else. I am totally involved in what I am doing. I don't seem to hear anything. I am less aware of myself and my problems. Then, people were asked to check on a 6-point scale ranging from 1= None of the time to 6= All of the time to understand how often they experience the flow. The mean score of respondents was 3.96 regarding this question and the standard deviation was 1.18.

Quality of flow experience. To measure quality of the flow experience, Witt and Ellis' (1987) flow scale was also used in the study. This scale consists of five questions which are: 1) When I was involved in the activity, I forgot about everything else; 2) I paid very close attention to the activity I was involved in; 3) During the activity, there were times when things were going so well, I felt I could do almost anything; 4) I forgot my worries during the activity I was involved in and; 5) I thought less about my problems during the activity. Respondents were asked how much they agreed with each of these five statements on a five-point scale where 0= strongly disagree and 4= strongly agree. A composite score was computed by summing together the items and the range of the scale was 0 to 20. The mean score was 14.40 and the range of the scale was from 9.00 to 20.00 with score of standard deviation of 2.49. In previous research, these five questions about flow quality demonstrated modest reliability with a Cronbach's alpha 0.74 (Collins, Sarkisian, & Winner, 2009). Also, reliability of the scale was checked in the study and Cronbach's alphas of the five questions were .693, which is considered as modest reliability.

Successful aging. To measure successful aging, the Successful Aging Inventory (SAI) was used. The SAI was developed by Flood (2006) and is comprised of 20 statements. The SAI

scale has five dimensions: 1) Intrapsychic and Functional Performance Coping Mechanisms (items 1-9); 2) Existential Being (items 16-20); 3) Introspective Gerotranscendence (items 12-14); 4) Spirituality (items 11 and 15); and 5) Retrospective Gerotranscendence (item 10) (Troutman, M., Nies, A. M., Small, S., & Bates, A., 2011). Respondents were asked to check from 0=Hardly ever to 4=Almost always for items 1-11. Item examples include: 1) I look forward to the future, 2) I am in a positive, pleasant mood, and 3) I spend time in prayer or doing some kind of religious activity. However, items 12-20 include responses 1) as I have aged, the way I think of the world has changed, 2) my life is meaningful, and 3) being the age that I am now is as good or better that I thought it would be were measured with a 5-point scale from “strongly disagree” to “strongly agree.” A composite successful aging score was calculated by summing answers to the questions with scores ranging from 0 to 80. Scores ranged from 51 to 79 with mean of 65.84 and standard deviation of 6.91.

The reliability and validity of the scale were demonstrated by Cozort (2008), Flood (2008), and McCarthy (2009). Cozort (2008) revised the Gerotranscendence Scale for use with older adults in the southern United States in his study, and showed high Cronbach’s alpha (0.907). McCarthy (2009) showed a moderate acceptable Cronbach’s alpha (0.82) in her study, which was conducted with 112 continuing care retirement community residents. Furthermore, Flood (2008) attempted to verify not only reliability of the SAI, but also validity of the SAI in her study. To justify the SAI’s validity, the Life Satisfaction Inventory-A (LSI-A), the Purpose in Life Test (PIL), the Mastery Scale (MS), and the Center for Epidemiologic Studies Depression Scale (CES-D) were used. The results showed the PIL, the MS, and the CES-D were significantly correlated with the SAI and the LSI-A was significantly correlated with the SAI. The reliability of the SAI in the present study was modest (.722).

Data Analysis

The Statistical Package for the Social Sciences (SPSS) Version 18.0 was used in the present study to analyze the data collected in the survey. Thereafter, four steps were followed. First of all, to check whether the samples satisfy assumptions of univariate analysis of covariance (ANCOVA) and multiple regression, the normal distribution of samples was checked by using Probability-probability test. Secondly, cluster analyses are used to divide participants into different types of serious leisure. Since each of 18 items of SLIM scale represent 18 dimensions of serious leisure, I did cluster analysis instead of factor analysis. Among the types of cluster analyses, hierarchical agglomerative clustering and K-mean clustering techniques were used. Since the hierarchical agglomerative clustering technique is an effective process of clustering when only data is small, the K-mean technique can supplement this weakness when these two techniques are used together. Thereafter, ANCOVA was used to compare each serious leisure type's mean scores of the seriousness of their leisure activity, frequency of flow, quality of flow and successful aging. For the last step, multiple regression was used to understand whether frequency and quality of flow have an influence on successful aging, and to find out which factor (i.e. frequency or quality of flow) has a larger influence on successful aging.

CHAPTER 4

RESULTS

In this chapter, a detailed description of the results is provided. The first part of this section consists of an overview of the research questions. Then, findings from this research are presented with the corresponding research questions.

Overview of the Research Questions

The purpose of this study is to understand the relationships between different types of serious leisure activities, flow and successful aging in later life. Five research questions were examined to understand these relationships.

- 1) What are the characteristics of older adults' serious leisure activities in terms of physical, cognitive, and social stimulation?
- 2) Are there differences in the degree of seriousness among the different serious leisure activity groups?
- 3) What is the relationship between different types of serious leisure and frequency of flow and quality of flow?
- 4) What is the relationship between different types of serious leisure and successful aging?
- 5) Does frequency of flow and quality of flow influence successful aging?

Exploratory Analysis

Tests for normal distribution. The data were examined for the normality of the sample distribution before using univariate analysis of covariance (ANCOVA) and multiple regression analysis to satisfy the assumptions of both statistical techniques. Two procedures were used to test for normality, Probability –Probability plots (P-P plot) were examined and then z-scores were computed and examined. The first step judges the data of the histogram visually relative to the diagonal. Upon visual inspection, it seemed like the distribution was not distorted, however, since this method is a little subjective, z-score tests were done next. Z-scores were calculated by converting the values of skewness and kurtosis into Z-scores to compare with different samples that use different measures to see how likely the values are occurring (Field, 2009). The SLIM scale scored .82 on skewness and 1.89 on kurtosis. Frequency of flow scored 1.97 on skewness and .67 on kurtosis, quality of flow scored .70 and .62 on skewness and kurtosis respectively, and the successful aging inventory scale (SAI) scored 1.4 on skewness and .22 on kurtosis (Table 4.1). The Z-score must be lower than 1.96 for the data to be considered normally distributed, lower than 2.58 to be normally distributed at $p < .05$, and lower than 3.29 to be normally distributed at $p < .01$ (Field, 2009). Since the skewness and kurtosis values were below 2.58, it was judged that the dependent variables were normally distributed.

Table 4.1.
Descriptive Statistics for the Four Scales: SLIM, Frequency of Flow, Quality of Flow, and SAI.

	SLIM	Frequency of flow	Quality of flow	SAI
Skewness	-.186	-.446	.159	-.323
Std.Error of Skewness	.226	.226	.226	.227
Kurtosis	-.846	-.300	.276	-.101
Std. Error of Kurtosis	.447	.447	.447	.451

Correlations. Correlation analyses were conducted with all the variables before the multiple regression to check for multicollinearity and to examine the bivariate relationships between variables. According to Dancey and Reidy (2004), a value of .70 to .99 is considered a strong correlation, moderate correlations have a value of .40 to .69, and modest correlations are indicated by values of .10 to .39. The correlation results are displayed in Table 4.2.

There were several modest correlations at the .05 significance level. First, age was negatively correlated with education (-.198). Secondly, the frequency of flow was positively correlated with successful aging (.204). Thirdly, the seriousness of leisure activity was negatively correlated with illness (-.214). Finally, the socially stimulating factor was positively correlated with the frequency of flow (.220). Modest correlations significant at the .01 level were observed among several variables. Firstly, the seriousness of leisure activity was positively correlated with successful aging (.249). Secondly, the socially stimulating factor was positively correlated with the cognitively stimulating factor (.255). Thirdly, the quality of flow was positively correlated with successful aging (.285). Fourthly, the cognitively stimulating factor was positively correlated with education (.297). Fifthly, the seriousness of leisure activity was positively correlated with the frequency of flow (.342). In addition, there were significant ($p < .01$) moderate correlations for three variables. The cognitively stimulating factor was positively correlated with the frequency of flow (.413). Secondly, the frequency of flow and quality of flow are positively correlated (.448). Thirdly, the seriousness of leisure activity was significantly correlated with the socially stimulating factor (.449), and the relationship between the seriousness of leisure activity and the quality of flow is positive and significant (.489).

Table 4.2.
Exploratory Correlation Analysis

	1	2	3	4	5	6	7	8	9	10	11
1.Age	1										
2.Gender	-.198*	1									
3.Education	-.182	-.107	1								
4.Illness	.038	-.062	.056	1							
5.SLIM	.002	.043	-.026	-.214*	1						
6.Frequency of flow	.112	.023	.088	-.104	.342**	1					
7.Quality of flow	-.132	.117	-.132	-.140	.489**	.488**	1				
8.SAI	-.013	.096	-.092	-.145	.249**	.204*	.285**	1			
9.Physically	-.155	-.024	.038	-.089	.109	.006	.008	.039	1		
10.Cognitively	-.042	.015	.297**	-.137	.143	.413**	.136	.110	-.087	1	
11.Socially	.030	-.053	.039	-.032	.499**	.220*	.131	.080	.197*	.255**	1

Results of Research Questions

Research question 1

What are the characteristics of older adults' serious leisure activity in terms of physical, cognitive, and social stimulation?

Cluster analysis was used to answer the first research question. Cluster analysis is defined as “a generic name for a variety of mathematical methods, numbering in the hundreds that can be used to find out which objects in a set are similar” (Romesburg, 2004, p. 4). Robert Tryon first used cluster analysis in 1939 and it is applied in a variety of fields not only for market research but also in biology, medicine, and psychology (Okazaki, 2005). Even in the field of leisure studies, cluster analysis is often used to understand consumer behavior and motivation (Beh & Bruyere, 2007; Brown & Haas, 1980; McCool & Reilly, 1993). Even though deciding the numbers of clusters is an important step, researchers admit that it is an unresolved problem and a judgment call (Wagner et al, 2005). Thus, Clatworth et al. (2005) suggested that using two different clustering algorithms on different samples of the same population increases the reliability of the cluster solutions.

The suggested analytical sequence was followed, starting with a hierarchical cluster analysis to find the optimal number of clusters. Examination of the agglomeration schedule from hierarchical clustering showed that a five-cluster solution was ideal. Thereafter, K-mean cluster analysis was applied by using the number of clusters specified from the hierarchical cluster analysis. After cluster memberships were determined by using both cluster analyses, each cluster was examined for patterns and labeled considering the mean score of the stimulating questions

where 0=not at all stimulating, 1=slightly stimulating, 2=moderately stimulation, 3=quite a bit stimulating, and 4=very much stimulating.

The mean stimulation score of the physically stimulating question was 2.42, the cognitive stimulating question was 2.96 and the socially stimulating question was 2.47. Group one (N=11) scored 2.64 on the physical stimulating factor, 1.73 on the cognitively stimulating factor, and 3.36 on the socially stimulating factor. Thus, group one was labeled as “physically & socially-centered stimulating” activity. Group two (N=17) was labeled as “cognitively-centered stimulating” activity since the mean score for the cognitive stimulation was high (3.82), and mean ratings for the physical (.35) and social stimulation (1.65) were relatively low. Group three (N=23) had modest means for all three questions (2.30 for the physical stimulation, 1.91 for the cognitive stimulation and 1.17 for the social stimulation). Therefore, group three was labeled as “diversely low stimulating” activity. On the other hand, the fourth group (N=42) was labeled as “diversely high stimulating” activity, since the mean scores for the social (2.76), physical (3.64), and cognitive (3.29) stimulation were moderate to high. The last group (N=20) had a mean of 1.65 on the physically stimulating factor, 3.45 on the cognitively stimulating factor, and 3.55 on the socially stimulating factor. Therefore, it was labeled as “cognitively & socially-centered stimulating” activity (Table 4.3).

Table 4.3.
Means of the Groups' Stimulating Factors

Self Reported Stimulation	Phy & Soc	Cog	Low	High	Cog & Soc
Physical	2.64	.35	2.30	3.64	1.65
Cognitive	1.73	3.82	1.91	3.29	3.45
Social	3.36	1.65	1.17	2.76	3.55
Number of cases	11	17	23	42	20

phy & soc=physically and socially-centered stimulating activity group, cog=cognitively centered stimulating activity group, low=diversely low stimulating activity group, high=diversely high stimulating activity group, and cog & soc=cognitively and socially-centered stimulating activity group. The range of stimulating factors is 0 to 4.

Research question 2

Are there differences in the degree of seriousness among the different serious leisure activity groups?

The physically and socially-centered stimulating activity group (m=121.12) had the highest mean score among five serious leisure groups, followed by the cognitively and socially-centered stimulating activity group (m=119.05), followed by the diversely high stimulating activity group (m= 116.20), the cognitively-centered stimulating activity group (m=107.54), and diversely low stimulating activity group (m=102.10; Table 4.4). There were several significant differences between the five activity groups. The physically and socially-centered stimulating activity group, the diversely high stimulating activity group, and the cognitively and socially-centered stimulating activity group have significantly higher mean scores than both the diversely low stimulating activity group and the cognitively-centered stimulating activity group.

Table 4.4.
Relationship Between Serious Leisure Type and Seriousness Controlling for Age, Gender & Illness

	M	Standard Error	F	Observed Power	Partial Estimated Squared	Significant 2-tailed
S.L. Types			5.898	.980	.183	.000
Phy & Soc	121.12	4.50				
Cog & Soc	119.05	3.28				
High	116.20	2.28				
Cog	107.54	3.56				
Low	102.10	3.07				

S.L. Types=Serious Leisure types, phy & soc=physically and socially-centered stimulating activity group, cog=cognitively centered stimulating activity group, low=diversely low stimulating activity group, high=diversely high stimulating activity group, and cog & soc=cognitively and socially-centered stimulating activity group. The seriousness of leisure activity scores range from 0 to 144.

Research question 3

What is the relationship between different types of serious leisure activity and the frequency of and quality of flow?

The univariate analysis of covariance (ANCOVA) was used to investigate relationships between types of serious leisure activity and the frequency and quality of flow, while controlling for the effects of age, gender, and illness (Tables 4.5 & 4.6). The cognitively-centered activity group reported experiencing flow the most frequently (m=4.41), followed by the diversely high stimulating activity group (m=4.24), the cognitively and socially-centered activity group (m=3.95), physically and the socially-centered stimulating activity group (m=3.73), and the diversely low stimulating activity group reported the lowest frequency of flow (m=3.22). There were some significant differences between the five activity groups. The mean frequency of flow scores of the cognitively-centered stimulating, the diversely high stimulating, and the cognitively and socially-centered stimulating activity groups were significantly higher than the diversely low

stimulating activity group. Regarding the quality of flow, there was no significant difference between different types of groups regarding the quality of flow.

Table 4.5.
Relationship Between Serious Leisure Type and Frequency of Flow, Controlling for Age, Gender & Illness

	M	Standard Error	F	Observed Power	Partial Estimated Square	Significant 2-tailed
S.L. types			3.68	.869	.123	.008
Cog	4.41	1.06				
High	4.24	1.10				
Cog & Soc	3.95	1.05				
Phy & Soc	3.73	1.01				
Low	3.22	1.28				

S.L. Types=Serious Leisure types, phy & soc=physically and socially-centered stimulating activity group, cog=cognitively centered stimulating activity group, low=diversely low stimulating activity group, high=diversely high stimulating activity group, and cog & soc=cognitively and socially-centered stimulating activity group. Flow Frequency: 1=none of the time to 6= all of the time

Table 4.6.
Relationship Between Serious Leisure Type and Quality of Flow Controlling for Age, Gender & Illness

	M	Standard Error	F	Observed Power	Partial Estimated Square	Significant 2-tailed
S.L. types			1,56	.468	.056	.190
Cog	15.06	2.93				
Phy & Soc	15.00	2.61				
High	14.76	2.74				
Cog & Soc	13.80	1.47				
Low	13.48	2.13				

S.L. Types=Serious Leisure types, phy & soc=physically and socially-centered stimulating activity group, cog=cognitively centered stimulating activity group, low=diversely low stimulating activity group, high=diversely high stimulating activity group, and cog & soc=cognitively and socially-centered stimulating activity group. The quality of flow scores range from 0 to 20.

Research question 4

What is the relationship between the types of serious leisure and successful aging?

The cognitively-centered stimulating activity group (m=66.18) scored highest regarding successful aging, followed by the diversely stimulating leisure activity group (m=66.10), the cognitively and socially-centered stimulating activity group (m=66.05), the diversely low stimulating activity group (m=64.82), and the physically and socially-centered stimulating activity group (60.00; Table 4.7). However, there was no significant difference between the different types of serious leisure activity and self-reported ratings of successful aging.

Table 4.7.
Relationship Between Serious Leisure Type and Successful Aging Controlling for Age, Gender & Illness

	M	Standard Error	F	Observed Power	Partial Estimated Square	Significant 2-tailed
S.L. types			.124	.075	.005	.974
Cog	66.18	7.50				
High	66.10	6.60				
Cog & Soc	66.05	7.19				
Low	64.82	6.01				
Phy & Soc	60.00	9.19				

S.L. Types=Serious Leisure types, phy & soc=physically and socially-centered stimulating activity group, cog=cognitively centered stimulating activity group, low=diversely low stimulating activity group, high=diversely high stimulating activity group, and cog & soc=cognitively and socially-centered stimulating activity group. The successful aging scores range from 0 to 80.

Research question 5

Does frequency of flow and quality of flow have an influence on successful aging?

Multiple regression was used to understand the relationship between flow (i.e., frequency and quality of flow) and successful aging (Table 4.8). Multiple regression is rooted in correlation

analysis. While correlation analysis involves checking relationships between two variables, multiple regression “puts all the information about a series of variables together into a single equation that takes account of the interrelations among independent variables” (Bernard, 2000, p. 620). In this study, three variables (age, gender, illness) were used as control variables with the frequency and quality of flow as the independent variables to examine how flow affects the dependent variable, successful aging. The overall model accounted for 6% (adj. $R^2=.060$) of the variance in successful aging. Among the independent variables, only the quality of flow was significantly related to successful aging ($b=.277$).

Table 4.8.
Multiple Regression of Frequency of Flow and Quality of Flow with Successful Aging.

Variables in the model	B	Stand. Beta	F	R ² change	Sig. Level	Pearson r
Predictors			2.415	.103	.041	.321
Constant	53.268	9.052			.000	
Age	.026	.095			.782	
Gender	.940	1.391			.501	
Illness	-1.503	1.386			.281	
Frequency of flow	.514	.615			.405	
Quality of flow	.624	.292*			.035	

Overall Model Summary:
Adjusted $R^2 = .060$ $df = 5$ $F = 2.415$ $p < .050$

* Significant at .05 level or below

Summary

Results of all the analyses conducted in the present study were presented in this chapter along with answers to the research questions. Hierarchical cluster and K-mean cluster analyses were used to classify the types of serious leisure participants. With the classified clusters,

ANCOVA was used to investigate the differences between the groups. Finally, multiple regression was used to understand the relationship between the frequency of flow and the quality of flow in the successful aging. The next chapter will offer a discussion of the findings.

CHAPTER 5

DISCUSSIONS

The purpose of this study was three-fold. First, this research endeavored to understand the characteristics of older adults' serious leisure activities regarding self-reported level of cognitive, social and physical stimulation. Another goal of this research was to understand the relationships between types of serious leisure, flow (quality and frequency) and successful aging. Finally, this researcher aimed to understand the role of serious leisure and flow in successful aging. A discussion of the findings of this study is presented in this chapter.

Research Question 1

What are the characteristics of older adults' serious leisure activities in terms of physical, cognitive, and social stimulation?

Among the 113 respondents, 11 were classified into the physically and socially-centered stimulating activity group, 17 into the cognitively-centered stimulating activity group, 23 respondents were classified into the diversely low stimulating activity group, 42 respondents were in the diversely high stimulating activity group, and 20 respondents were in the cognitively and socially-centered stimulating activity. Participants in this study scored highest on the cognitive stimulation factor ($m=2.92$), followed by the socially stimulating factor ($m=2.47$) and physically stimulating factor ($m=2.42$). In other words, the respondents' selected activity tended to be highest for the cognitive stimulation, followed by the social stimulation, and less so for the physical stimulation. This could be explained since some older adults have difficulties

participating in physical activities due to functional ability and health status (Coakley, 2001; Hargreaves, 1994; Kluge, 2002; Vertinsky, 1995). However, it also should be noted that these means were only moderately high.

Research Question 2

Are there differences in the degree of seriousness among the different serious leisure activity groups?

Among the five different serious leisure types, there were several significant differences regarding the seriousness of their chosen leisure activity. The physically & socially-centered stimulating activity group (m=119.55) has a significantly higher mean seriousness score than the cognitively-centered stimulating activity group (m=108.00) and the diversely low stimulating activity group (m=101.43). Also, the diversely high stimulating activity group (m=116.86) has a significantly higher mean than the cognitively-centered stimulating activity group (m=108.00) and the diversely low stimulating activity group (m=101.43). Moreover, there is a significant difference in the mean seriousness score between the cognitive & socially-centered stimulating activity group (m=118.90), the cognitively-centered stimulating activity group (m=108.00) and the diversely low stimulating activity group (m=101.43). Based on the results, three groups, which scored high on the seriousness of leisure activity, have one thing in common. They all have a high score on the socially stimulating factor. Thus, the results suggest that the social component of the activity is important to seriousness of leisure activity. This is also evident by inspecting the correlation matrix. The socially stimulating factor (.449) has the highest correlation on seriousness of leisure activity among the three factors (i.e., physical, social,

cognitive). In addition, several researchers have stated the importance of socializing regarding serious leisure activity (Brown, McGuire, & Voelkl, 2008; Stebbins, 2004). First, Stebbins (2004) mentioned unique ethos as one of the qualities of serious leisure in his study. He stated that serious leisure participants tend to share unique norms or culture with people who participate in the same activity and this could be formed through socializing with each other (Stebbins, 2004). Also, In Brown, McGuire, & Voelkl (2008)'s study, shag dancing participants emphasized the value of social interaction, friendship and belongingness as important reasons they participate in shag dancing.

Research Question 3

What is the relationship between different types of serious leisure and frequency of flow and quality of flow?

The results indicated that there were several significant differences in frequency of flow between different types of serious leisure activity participation. First, there was a significant difference in frequency of flow between the cognitively-centered stimulating activity group (m=4.41) and the diversely low stimulating activity group (m=3.22). Also, the diversely high stimulating activity group (m=4.24) reported experiencing flow more frequently than the diversely low stimulating activity group (m=3.22). Finally, the cognitively and socially-centered stimulating activity group (m=3.95) reported experiencing flow more often than the diversely low stimulating activity group (m=3.21). By examining the differences between the groups, it appears that the cognitive stimulation plays an important role in terms of the frequency of flow for the target activity upon which respondents answered questions about flow experiences.

However, surprisingly, the findings are not consistent with Hwang's (2007) study. According to Hwang (2007), physically active-based leisure activity is more likely to facilitate flow experiences more easily than the cognitive-based activity, since the physically active-based leisure activity provides quick feedback. However, the results of this study indicated that cognitive stimulation is a key factor in terms of frequency of flow. One of the possible explanations is the sample of the study. The respondents were mostly collected from senior related programs so that they might have enough physical strength already to actively participate on senior related programs. Thus, the serious leisure activities they choose to participate on might not physically stimulating enough to experience flow.

On the other hand, the results showed no significant differences among the different types of serious leisure regarding the quality of flow. These results were surprising, since the quality of flow is moderately correlated with the seriousness of leisure activity (.489) and the frequency of flow (.488). However, while several researches have studied the relationship between serious leisure and experiencing flow (Heo, Lee, Pederson & McCormick, 2010; McCarville, 2007; Stebbins, 2010), none of these researchers have specifically examined the relationship between serious leisure and the quality of flow. Thus, more research should be conducted to better understand the relationships between serious leisure and the quality of flow.

Research Question 4

What is the relationship between different types of serious leisure and successful aging?

The results indicated no significant differences among types of serious leisure regarding successful aging. This result was also unexpected, since the successful aging have modest

statistically significant correlations with the seriousness of leisure activity (.249) and with the frequency of flow (.204). Also, in previous research on serious leisure, researchers found that serious leisure activity was associated with the successful aging (Brown, McGuire, & Voelkl, 2008; Heo, Lee, McCormick & Pedersen, 2010; Knight & Ricciardelli, 2003; Mannell, 1989). For example, in a qualitative study of the serious leisure activity, shag dancing, Brown et al (2008) found that participants described their experiences with shag dancing in ways that are consistent with components of the successful aging. They suggested that by persevering to learn difficult steps of shag dance, they become more the physically active and by participating in shag dance, they have a chance to meet new people and feel a sense of belongingness, which are components of the successful aging (Brown, McGuire, & Voelkl, 2008). In another study, researchers used the Experience Sampling Method (ESM) to understand the relationship between serious leisure activity and subjective well-being (Heo et al, 2010). The results indicated that subjective well-being is an important benefit of serious leisure activity in everyday life. In addition, some researchers highlighted that participating in serious leisure activities offers opportunities for personal fulfillment, self expression, and self identity enhancement, which are characteristics of the successful aging (Csikszentmihalyi, 1975; Mannell & Kleiber, 1997; Stebbins, 1992, 2001, 2002). The possible explanation for the finding is that since questions about the successful aging were not focused on leisure per se and were more global in nature, other factors besides serious leisure are likely affecting these older adults' ratings of successful aging.

Research Question 5

Does frequency of flow and quality of flow have an influence on successful aging?

In this study, when the researcher examined the frequency of flow and the quality of flow, relative to the successful aging while controlling for gender, age and illness, only quality of flow explained the variance in the successful aging. Also, the quality of flow (.285) had a slightly higher correlation with the successful aging than the frequency of flow (.204). These findings were consistent with the results of Collins, Sarkisian, & Winner's (2008) research in which they found that the quality of flow explained more variance in the successful aging than the frequency of flow. They used Hierarchical Linear Modeling (HLM) to investigate inter-individual and intra-individual effects of flow experiences on life satisfaction. Surprisingly, in their study, frequency of flow was negatively related to life satisfaction (which is a concept related to the successful aging). They suggested the possibility that people who experience flow often feel less of a boost of positive feelings, since the frequency flow is more common to them (Collins et al, 2008). Thus, the result of the present study strengthens the statement that the quality of flow is more influential than the frequency of flow.

Limitations of Research

This study has several limitations, and findings must be interpreted in light of these limitations. First of all, this was not a random sample, therefore, results cannot be generalized to the population and results are not representative of all older adults. Also, the sample for this study is relatively small (N=113) and met the criteria of a 90% confidence interval. In addition, since questionnaires were only collected from participants in the senior related programs located

in the Champaign County, the sample is probably biased toward types of people who participate in the senior related programs. This study was also cross sectional, so it is not possible to make any statements about cause and effect in this study.

Moreover, majority of participants were White/Caucasian. Therefore, it would be worthwhile to conduct this study with a more diverse population and a random sample to generalize the results of study more broadly. Finally, some of the respondents also filled out the survey incorrectly, suggesting the survey should be revised to increase its read-ability in terms of clarity of instructions. This resulted in the researcher having to exclude over 20 cases of data from the total sample and analysis.

Practical Implications

Despite the limitations, this study can contribute to better understanding the relationship among types of serious leisure (based upon how stimulating the activity is), flow and successful aging. Moreover, this study has practical implications for people who work with older adults. By showing there are no significant differences among serious leisure activity types regarding quality of flow and successful aging, older adults could have broad choices of serious leisure activity to experience high quality of flow and perhaps age more successfully. Also, since correlation analysis indicated statistically significant correlations between the seriousness of leisure activity and the frequency of flow, the quality of flow and the successful aging, older adults might want to continue or add a serious leisure activity to their leisure repertoire. In addition, these results might suggest that practitioners who organize senior programs should make their activities socially, cognitively and physically stimulating to help older adults to be more serious on leisure activity and experience flow. Among the stimulating factors, practitioners should keep in mind that the socially stimulating factor (.499) plays important role

regarding seriousness of leisure activity and the cognitive stimulating factor (.413) appears important regarding the frequency of flow.

Future Research

Serious leisure and flow and serious leisure and successful aging have been studied by many researchers (Collins, Sakisian, and Winner, 2009; Mannell, 1993; Brown, Mcguire, and Voelkl, 2008; Heo & Lee, 2009; Han, 1988; Brancato, 2009). Thus, this study could lay the foundation for some important and interesting future studies. However, since flow and successful aging are complex and multi-dimensional concepts, these concepts should be investigated from various angles. First of all, contrary to Hwang's (2007) idea that there is a positive relationship between doing physically active serious leisure and the experience flow, the results of the present study indicated that the physically stimulating factor was not associated with the frequency of flow experiences. Therefore, it is worthwhile to research further the impact of the physically stimulating factor on the experiencing flow with more diverse sample and perhaps replicate this study with a more random and diverse sample or use different methods. Secondly, in this study, the frequency of flow was not associated with successful aging, while the quality of flow has significant impact on the successful aging. However, these results should be further studied, since very few researches have been conducted to understand the relationship between the quality of flow and successful aging. Also, since the bivariate correlations were quite modest for the relationships between the frequency of flow and the successful aging (.204) and the quality of flow and the successful aging (.285) and several researchers have asserted that the experiencing flow is positively associated with successful aging (Asakawa, 2010; Brancato, 2009; Collins, Sakisian, & Winner, 2009). Thirdly, since flow and successful aging are complex concepts, it is

suggested to add focus groups or interviews to better understand the relationships with serious leisure. This is because conducting interviews or focus groups lead to understand more deeply about the relationships between serious leisure, flow and successful aging that quantitative study can miss. Finally, it is suggested to conduct longitudinal studies on the relationship between serious leisure, flow and successful aging. Since later life of older adults is increasing due to longer life expectancy, it is important to study how participating in serious leisure activities have impact on flow and successful aging over the later life.

Conclusion

Aging has been the center of attention as the population of older adults has increased dramatically. Many researchers mentioned serious leisure and benefits of serious leisure in terms of the frequency flow (Mannell, 1997; McCarville, 2007; Stebbins, 2010) and aging successfully in their later life (Brown, McGuire, & Voelkl, 2008; Heo & Lee, 2010; Major, 2001; Siegenthaler & O'Dell, 2003). Thus, the present study attempted to divide types of serious leisure by self reported physical, cognitive and social stimulation using cluster analysis. Then, this study compared the different types of serious leisure with ANCOVA regarding frequency of flow, quality of flow and successful aging. Further, frequency of flow and quality of flow was compared which is stronger influential variables is on successful aging by using multiple regression. The results indicate that high diverse stimulating leisure activity especially socially stimulating factor is important to explain the variability in the seriousness of the targeted leisure activity. Also, the cognitively stimulating factor played most important role in terms of experiencing frequency of flow. However, the types of serious leisure activities did not have a significant difference with quality of flow and successful aging. This indicates that older adults

can enjoy any leisure activities they like to experience high quality of flow and to be age successfully. However, since seriousness of leisure activity was positively correlated with quality of flow and successful aging, it is important to investigate further on these complex relationships.

REFERENCES

- Angeli, E., Wagner, J., Lawrick, E., Moore, K., Anderson, M., Soderland, L., & Brizee, A. (2010, May 5). *General format*. Retrieved from <http://owl.english.purdue.edu/owl/resource/560/01/>
- Asakawa, K. (2004). Flow experience and autotelic personality in Japanese college students: How do they experience challenges in daily life? *Journal of Happiness Studies*, 5, 123–154.
- Atchley, R. C. (1989). A continuity theory of normal aging. *Gerontologist*, 29, 183-190
- Bailey, M. & McLaren, S. (2005). Physical activity alone and with others as predictors of sense of belonging and mental health in retirees. *Aging & Mental Health*, January 2005; 9(1): 82–90
- Beall, S. C., Baumhover, A. L., Maxwell, J. L., & Pieroni, E. R. (1996). Normal versus Pathological Aging: Knowledge of Family Practice Residents. *The Gerontologist*. Vol. 36, No. 1,113-117.
- Beh, A., & Bruyere, B. L. (2007). Segmentation by visitor motivation in three Kenyan national reserves. *Tourism Management*, 28(6), 1464–1471
- Bendle, L. & Patterson, I. (2008). Serious leisure, Career Volunteers and the Organization of Arts Events in a Regional Australian City. *International Journal of Event Management Research*. Volume 4, Number 1, 2008
- Bernard, R.H. (2000). *Research Methods in Anthropology: Qualitative and Quantitative Approaches*, London, Sage
- Bowling, A. (2007). Quality of life in older age - what older people say. Are we measuring the right things? In: Mollenkopf, Heidrun and Walker, Alan, (eds.) *Quality of Life in Old Age*. Dordrecht, Netherlands: Springer. pp. 15 - 30. (Social Indicators Research Series, no. 31)
- Bowling, A. & Dieppe, P. (2005). What is successful ageing and who should define it? *BMJ* volume 24-31. December.
- Brancato, F. (2009). Going with the Flow: Tai Chi Chuan and Aging Gracefully. *The Annual Journal of the Osher Lifelong Learning Institute*. Vol.4 p.78~ p.83.
- Brown, C. A. (2007). The Carolina Shaggers: Dance as Serious Leisure. *Journal of Leisure research*, Vol. 39. No. 4, pp. 623-647
- Brown, C. A, McGuire, R A., & Voelkl, J. (2008) The Link between Successful Aging and Serious Leisure. *International Journal of Aging and Human Development*, 66(1), 73-95.

- Brown, P. J., & Haas, G. E. (1980). Wilderness recreation experiences: The Rawah case. *Journal of Leisure Research*, 12(3), 229–241.
- Buchnan, T. (1985). Commitment and leisure behavior: A theoretical perspective. *Leisure Sciences*, 7, 401-420.
- Burnett-Wolle, S. & Godbey, G. (2007). Refining research on older adults' leisure: implications of selection, optimization, and compensation and socioemotional selectivity theories. *Journal of Leisure Research*. Vol. 39 No. 3 pp. 498-513.
- Center for Disease Control and Prevention (2010). Chronic Diseases and Health Promotion. Retrieved from <http://www.cdc.gov/chronicdisease/overview/index.htm>
- Clarke, S.G., & Haworth, J.T. (1994). Flow experience in the daily lives of sixth-form college students. *British Journal of Psychology*, 85(4), 511–523.
- Clatworthy, J., Buick, D., Hankins, M., Weinman, J., & Horne, R. (2005). The use and reporting of cluster analysis in health psychology: A review. *British Journal of Health Psychology*, 10, 329–358.
- Clulow, V. & Bartlett, H. (2009). Healthy Ageing and Lifelong Learning: perceptions of Australian baby boomers to inform public policy, ANZMAC conference, Melbourne Australia.
- Coakley, J. J. (2001). *Sport in society: Issues and controversies* (7th ed.). St. Louis, MO: Mosby-Year Book.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.), New Jersey: Lawrence Erlbaum Associates, Retrieved from http://books.google.com/books?id=TI0N2IRA09oC&printsec=frontcover&dq=%22jacob+cohen%22&hl=en&ei=GfE4TNSZHMK6cai36foO&sa=X&oi=book_result&ct=result&resnum=1&ved=0CCgQ6AEwAA#v=onepage&q&f=false
- Cohen, J. (1992), "Statistical power analysis", *Current Directions in Psychological Science* 1 (3), Retrieved from <http://137.148.49.106/offices/assessment/Assessment%20Reports%202006/CoS/Psychology%203%20of%203.pdf>, retrieved 10 July 2010 JSTOR link
- Collins, A. L., Sarkisian, N., & Winner, E. (2009). Flow and Happiness in Later life: An Investigation into the Role of Daily and Weekly Flow Experiences. *J Happiness Stud* (2009) 10: 703-719. DOI 10.1007/s10902-008-9116-3

- Cozort, R. (2008). Revising the Gerotranscendence Scale for use with older adults in the Southern United States and establishing psychometric properties of the Revised Gerotranscendence Scale (Doctoral dissertation). Retrieved from <https://connect2.uncc.edu/DanaInfo=proquest.umi.com?pqdweb?index=0&did=1650503061&SrchMode=2&sid=1&Fmt=6&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1268336069&clientId=15111>
- Crowther M.R., Parker M.W., Achenbaum W.A., Larimore W.L., Koenig H.G. (2002). Rowe and Kahn's model of successful aging revisited: Positive spirituality—The forgotten factor. *The Gerontologist* 2002;42:613-620.
- Csikszentmihalyi, M. (1992). The flow experience and its significance for human psychology. In M. Csikszentmihalyi & I.S. Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness* (pp. 15–35). New York: Cambridge University.
- Csikszentmihalyi, M., & Csikszentmihalyi, I.S. (1988). *Optimal experience: Psychological studies of flow in consciousness*. New York: Cambridge University.
- Csikszentmihalyi, M & LeFevre, J. (1989). Optimal Experience in Work and Leisure. *Journal of Personality and Social Psychology*. Vol. 56, No. 5,815-822
- Csikszentmihalyi, M., & Kleiber, D. A. (1991). Leisure and self-actualization. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), *Benefits of leisure* (pp.91 -102). State College, PA: Venture.
- Dancey, C., & Reidy, J. (2004). *Statistics without Maths for Psychology: Using SPSS for Windows*. London: Prentice Hall.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55, 34–43.
- Diener, E., Snadvik, E., & Larsen, R.J. (1985). Age and sex differences for emotional intensity. *Developmental Psychology*, 21, 542–546.
- Diener, E., & Suh, E.M. (1998). Age and subjective well-being: An international analysis. *Annual Review of Gerontology and Geriatrics*, 17, 304–324.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276–302.
- Dionigi, R. (2006). Competitive Sport as Leisure in Later Life: Negotiations, Discourse, and Aging. *Leisure Sciences*, 28: 181–196, 2006. ISSN: 0149-0400 print / 1521-0588 online. DOI: 10.1080/01490400500484081

- Evenson, K.R., Rosamond, W.D., Cai, J., Diez-Roux, A.V., & Brancati, F.L. (2002). Influence of retirement on leisure-time physical activity. *American Journal of Epidemiology*, 155(8), 692–699.
- Everitt, B.S. (1994). *A Handbook of Statistical Analyses Using S-Plus*. First edition, Chapman & Hall, London.
- Field, Andy. (2009). *Discovering Statistics Using SPSS 3rd edition*. London, Sage.
- Flood, M. (2008, November). Developing a questionnaire to measure successful aging. Poster presentation, Gerontological Society of America annual meeting, Washington, DC.
- Freund, A. M., & Baltes, P. B. (1998). Selection, Optimization, and Compensation as strategies of life management: Correlations with subjective indicators of successful aging. *Psychology and Aging*, 13, 531-543.
- Gailt N. (2007). Retirees' Leisure: Activities, Benefits, and their Contribution to Life Satisfaction. *Leisure Studies*, Vol. 26, No. 1, 65–80, January 2007.
- Gailt N. & Kleiber, D. A. (2007). Reconsidering change and continuity in later life: Toward an Innovation theory of successful aging. *Int'l. J. Aging and Human Development*, Vol. 65(1) 1-22, 2007
- Godbey, G. (1999). *Leisure in your life: An exploration* (5th ed.). State College, PA: Venture Publishing.
- Goff, S.J., Fick, D.S., & Oppliger, R.A. (1997). The moderating effect of spouse support on the relation between serious leisure and spouses' perceived leisure-family conflict. *Journal of Leisure Research*, 29(1), 47–60.
- Gould, J., Moore, D., McGuire, F., & Stebbins, R. (2008). Development of the serious leisure inventory and measure. *Journal of Leisure Research*, 40(1), 47–68.
- Growther, R. M., Parker, W. M. Achenbaum, W. A., Larimore, L. W. & Koenig, G. H. (2002). Rowe and Kahn's Model of Successful Aging Revisited: Positive Spirituality – The forgotten Factor. *The Gerontologist*, Vol. 42, No.5, 613-620.
- Hall, E.T., Seekamp, E. & Cole. D. (2010). Do Recreation Motivations and Wilderness Involvement Relate to Support for Wilderness Management? A Segmentation Analysis. *Leisure Sciences*. Vol. 32, Issue 2, pp. 109~124. DOI: 10.1080/01490400903547096
- Han, S. (1988). The relationship between life satisfaction and flow in elderly Korean immigrants. In M. Csikszentmihalyi & I.S. Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness* (pp. 138–149). New York: Cambridge.

- Hargreaves, J. (1994). *Sporting females: Critical issues in the history and sociology of women's sports*. London: Routledge.
- Haworth, J.T. (1986). Meaningful activity and psychological models of non-employment. *Leisure Studies*, 5, 281–297.
- Hektner, J.M., & Csikszentmihalyi, M. (1996). *A longitudinal exploration of flow and intrinsic motivation in adolescents*. Paper presented at the annual meeting of the American Educational Research Association, New York.
- Heo, J., Lee, Y., McCormick, B.P., & Pedersen, P.M. (2010). Daily experience of serious leisure, flow and subjective well-being of older adults. *Leisure Studies*. Vol. 29, No. 2, April 2010, 207–225
- Heo, J. & Lee, Y. (2010). Serious leisure, Health Perception, Dispositional Optimism, and Life Satisfaction Among Senior Games Participants. *Educational Gerontology*, 36:112-126, 2010. ISSN: 0360-1277 DOI: 10.1080/03601270903058523
- Herero, V. G., & Extremera, N. (2010). Daily life activities as mediators of the relationship between personality variables and subjective well-being among older adults. *Personality and Individual Differences*, 49(2), 124-129
- Hutchinson, S.L., & Kleiber, D.A. (2005). Gifts of the ordinary: Casual leisure's contributions to health and well-being. *World Leisure Journal*, 47(3), 2–16.
- Ishimura, I. Kodama, M. (2009). Flow experience in everyday activities of Japanese college students: Autotelic people and time management. *Japanese Psychological research*, 51(1), 47-54.
- Janke, M. & Der Ananian, C. (2010). Leisure in Later Life. In Laura Payne, Barbara Ainsworth, & Geoffery Godbey (eds). *Leisure, Health, and Wellness*. 2010. pp 249-261. State College, PA: Venture Publishing.
- Janke, M., Davey, A., & Kleiber, D. (2006). Modeling change in older adults' leisure activities. *Leisure Sciences*, 28(3), 285–303.
- Jones, I., & Symon, G. (2001). Lifelong learning as serious leisure: policy, practice and potential. *Leisure Studies*, 20(4), 269-283.
- Kane, M.J., & Zink, R. (2004). Package Adventure Tours: Markers in Serious Leisure Careers. *Leisure Studies*, 23(4), 329-3
- Kelly, J. R., & Freysinger, V.J. (2000). *21st century leisure: Current issues*. Needham Heights, MA: Pearson Education Company

- Kim, J. & Heo, J. (2009). The Field of Serious Leisure. WWW. NRPA. ORG. Research Update p.29-31. Retrieved from http://findarticles.com/p/articles/mi_m1145/is_12_44/ai_n48711737/
- Kluge, M. A. (2002). Understanding the essence of a physically active lifestyle. *Journal of Aging and Physical Activity*, 10(1), 4–27.
- Larson, R., Mannell, R., & Zuzanek, J. (1986). Daily well-being of older adults with friends and family. *Psychology and Aging*, 1(2), 117–126.
- Lawton, M.P. (1994). Personality and affective correlated of leisure activity participation by older people. *Journal of Leisure Research*, 26(2), 138–157.
- Lemon, W. B., Bengtson, L. V., & Peterson, A. J. (1972). An Exploration of the Activity Theory of Aging: Activity Types and Life Satisfaction among In-Movers to a Retirement Community. *Journal of Gerontology* 1972, Vol. 27, No. 4, 511-523
- Lin, J. Y., Chen, L. S., Wang, E. S., & Cheng, J. M. (2007). The Relationship Between Extroversion and Leisure Motivation: Evidence from Fitness Center Participation. *Social Behavior and Personality*. 35 (10), 1317-1322.
- Lindeman, R.D. (2005). Successful Aging. *Experimental Lung Research*, 31: 3-86, 2005 ISSN: 0190-2148 pdnt/1521-0499 DOI: 10.1080/01902140591005067
- McCarthy, V. (2009). Exploring a new theory of successful aging among low-income older adults in an independent and assisted living community (Unpublished doctoral dissertation). University of Kentucky, Louisville.
- Menec, V. (2003). The relation between everyday activities and successful aging: A 6-year longitudinal study. *J Gerontology B Psychol Sci Soc Sci* 2003; 58(2):S74-S82.
- Major, W.F. (2001). The benefits and costs of serious running. *World Leisure Journal*, 43(2), 12–25.
- Mannell, R.C. (1993). High investment activity and life satisfaction among older adults: Committed, serious leisure, and flow activities. In J.R. Kelly (Ed.), *Activity and aging*. (pp. 125–145). Newbury Park, CA: Sage.
- Mannell, R. C., & Kleiber, D. A. (1997). *A social psychology of leisure*. State College, PA: Venture Publishing, Inc.
- Mannell, R. C., Zuzanek, J., & Larson, R. (1988). Leisure states and flow experiences: Testing perceived freedom and intrinsic motivation hypotheses. *Journal of Leisure Research*, 20, 289-304.

- McCool, S. F., & Reilly, M. (1993). Benefit segmentation analysis of state park visitor setting preferences and behavior. *Journal of Park and Recreation Administration*, 11(4), 1–14.
- McGuire, F.A., Boyd, R.K., & Tedrick, R.E. (1999). *Leisure and aging: Ulyssean living in later life*. Champaign, IL: Sagamore.
- McLaughlin S. J., Connell C. M., Heeringa S. G., Li, L. W., & Roberts J. S. (2010). Successful aging in the United States: Prevalence estimates from a national sample of older adults. *Journal of Gerontology: Social Sciences* 2010; 65B: 216-226.
- Meiner, E.S. & Lueckenotte, A. (2005). *Gerontologic Nursing* (3th Edition). Trade paperback, Mosby. ISBN: 9780323031462
- Moen, P. (1996). A life course perspective on retirement, gender, and well-being. *Journal of Occupational Health Psychology*, 1(2), 131–144.
- Moneta, G.B. & Csikszentmihalyi, M. (1996). The effect of perceived challenges and skills on the quality of subjective experience, *Journal of Personality*, Vol. 64 No. 2, pp. 275-310.
- Nimrod, G. (2007). Expanding, Reducing, Concentrating and Diffusing: Post Retirement Leisure Behavior and Life Satisfaction. *Leisure Sciences*. 29: 91–111, 2007. ISSN: 0149-0400 print / 1521-0588 online. DOI: 10.1080/01490400600983446
- Nimrod, G., Janke, C.M. & Kleiber, A. D. (2009). Expanding, Reducing, Concentrating and Diffusing: Activity Patterns of Recent Retirees in the United States. *Leisure Sciences*, 31: 37–52, 2009. ISSN: 0149-0400 print / 1521-0588 online. DOI: 10.1080/01490400802558087
- Okazaki, S. (2006). What do we know about mobile Internet adopters? A cluster analysis. *Information & Management*. Vol. 43 (2006). 127–141
- Paletta, D. (2011). U.S. Life Expectancy hits All-time high. *The Wall Street Journal*, retrieved from <http://blogs.wsj.com/economics/2011/03/16/u-s-life-expectancy-hits-all-time-high/>
- Palmore, E. (1979). Predictors of successful aging. *The Gerontologist*, 19, 427–431.
- Patterson, I. & Pegg, S. (2009). Serious leisure and people with intellectual disabilities: benefits and opportunities. *Leisure Studies*. Vol. 28, No. 4, October 2009, 387–402
- Payne, B. R., Jackson, S. A., Noh, S. R., & Stine-Morrow, E. A. L. (in press). In the zone: Flow state and cognition in older adults. *Psychology and Aging*.
- Payne, L. L., Ainsworth, B., & Godbey, G. (2010). *Leisure, Health, and Wellness: Making the connections*. State College, PA: Venture Publishing.

- Pinquart, M. (2001). Age differences in perceived positive affect, negative affect, and affect balance in middle and old age. *Journal of Happiness Studies*, 2, 375–405.
- Population Division of the Department of Economic and Social Affairs (2002). Population Aging. Retrieved from <http://www.un.org/esa/population/publications/ageing/Graph.pdf>
- Romesburg, C. (2004). *Cluster Analysis for Researchers*. North Carolina. Lulu press.
- Rowe, J.W., & Kahn, R.L. (1987). Human aging: usual and successful. *Science*. Vol. 237. No. 4811 pp. 143-149. DOI: 10.1126/science.3299702
- Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, 37, 433–440.
- Ryan, C. (2002). Motives, behaviors, body and mind. *The tourist experience* (2nd ed.) (pp. 27-57). London: Continuum.
- Shen, X.S. & Yarnal, C. (2010). Blowing Open the Serious Leisure-Casual Leisure Dichotomy: What's In There? *Leisure Sciences*, 32: 162–179, 2010. ISSN: 0149-0400 print / 1521-0588 online. DOI: 10.1080/01490400903547179
- Siegenthaler K L., & O'Dell, I. (2003). Older Golfers: Serious Leisure and Successful Aging. *World Leisure Journal*, 45(1), 47-54
- Silverstein, M., & Parker, M. (2002). Leisure activities and quality of life among the oldest older in Sweden. *Research on Aging*, 24(5), 528–547.
- Stathi, A., Fox, K.R., & McKenna, J. (2002). Physical activity and dimensions of subjective well-being in older adults. *Journal of Aging & Physical Activity*, 10(1), 76–92.
- Stebbins, R.A. (1982). Serious leisure: A conceptual statement. *Pacific Sociological Review*, 25, 251-272.
- Stebbins, R.A. (1997). Casual leisure: A conceptual statement. *Leisure Studies*, 16, 17-25
- Stebbins, R.A. (2001). Serious leisure. *Society*, May/June 2001.
- Stebbins, R.A. (2001). The costs and benefits of hedonism: Some consequences of taking casual leisure seriously. *Leisure Studies*, 20, 305-309.
- Stebbins, R. A. (2002). The organizational basis of leisure participation. State College, PA: Venture Publishing.
- Stebbins, R.A. (2008). Right leisure: Serious, Casual, or Project-based? *Neuro Rehabilitation* 23 (2008)

- Thang, L. L. (2006). Experiencing Leisure in Later Life: A Study of Retirees and Activity in Singapore. *J Cross Cult Gerontol* 20:307-318, DOI 10.1007/s10823-006-9010-6
- Troutman, M., Nies, A. M., & Bentley, M. (2011). Measuring Successful Aging in Southern Black Older Adults. *Educational Gerontology*. 37: 38–50, 2011. ISSN: 0360-1277 print=1521-0472 online. DOI: 10.1080/03601277.2010.500587
- Troutman, M., Nies, A. M., Small, S., & Bates, A. (2011). The Development and Testing of an Instrument to Measure Successful Aging. *Research in Gerontological Nursing*. DOI: 10.3928/19404921-20110106-02
- Tsaur, S. & Liang, Y. (2008). Serious Leisure and Recreation Specialization. *Leisure Sciences*, 30: 325–341, 2008. ISSN: 0149-0400 print / 1521-0588 online. DOI: 10.1080/01490400802165115
- Underwood A. J. (1981). Techniques of analysis of variance in experimental marine biology and ecology. *Oceanogr. Mar. Biol. Ann. Rev.* 19, 513–605.
- Underwood A. J. (1997). *Experiments in Ecology: Their Logical Design and Interpretation Using Analysis of Variance*. Cambridge University Press, Cambridge.
- U.S. Census Bureau. (2000). Profiles of General Demographic Characteristics. Retrieved from <http://censtats.census.gov/data/US/01000.pdf>
- Vaillant, G. E. (2002). *Aging well*. Boston: Little Brown and Company.
- Verena H. M. (2003). The Relation Between Everyday Activities and Successful Aging: A 6-Year Longitudinal Study. *Journal of Gerontology*. 2003, Vol. 58B, No. 2, S74–S82
- Vertinsky, P. (1995). Stereotypes of aging women and exercise: A historical perspective. *Journal of Aging and Physical Activity*, 3, 223–237.
- Vittersø, J. (2003). Flow versus life satisfaction: A projective use of cartoons to illustrate the difference between the evaluation approach and the intrinsic motivation approach to subjective quality of life. *Journal of Happiness Studies*, 4, 141–167.
- Wagner, R., Scholz, S. W. & Decker, R. (2005). The Number of Clusters in Market Segmentation, in: Baier, D., Decker, R. and Schmidt-Thieme, L. (Eds.): *Data Analysis and Decision Support*, Heidelberg: Springer, 157-176.
- Ward, J. H. & Hook, M. E. (1963). Application of a hierarchical grouping procedure to a problem of grouping profiles. *Educational and Psychological Measurement*, 1963, 23, 69-82.
- Witt, P., & Ellis, G. (1987). *The leisure diagnostic battery users manual*. State College, PA: Venture Publishing.

World Health Organization (2010). Definition of an older or elderly person. Retrieved from <http://www.who.int/healthinfo/survey/ageingdefnolder/en/index.html>

World Health Statistics (2010). Part II Global Health Indicators. Retrieved from http://www.who.int/whosis/whostat/EN_WHS10_Part2.pdf

APPENDIX A:

IRB LETTER OF APPROVAL

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Vice Chancellor for Research
Institutional Review Board
528 East Green Street
Suite 203
Champaign, IL 61820



March 22, 2011

Laura Payne
Recreation Sport and Tourism
104 Huff Hall
1206 S Fourth St
M/C 584

RE: *The Effect of Different Types of Serious Leisure in Flow and Successful Aging in later life*
IRB Protocol Number: 11462

Dear Laura:

Thank you for submitting the completed IRB application form for your project entitled *The Effect of Different Types of Serious Leisure in Flow and Successful Aging in later life*. Your project was assigned Institutional Review Board (IRB) Protocol Number 11462 and reviewed. It has been determined that the research activities described in this application meet the criteria for exemption at 45CFR46.101(b). Category 2 applies since this study involves completion of a survey of older adults about how serious leisure affects their experience of flow and successful aging later in life. No identifying information is collected on the surveys.

This determination of exemption only applies to the research study as submitted. **Exempt protocols are approved for a maximum of three years.** Please note that additional modifications to your project need to be submitted to the IRB for review and exemption determination or approval before the modifications are initiated. To submit modifications to your protocol, please complete the IRB Research Amendment Form (see <http://irb.illinois.edu/?q=forms-and-instructions/research-amendments.html>).

We appreciate your conscientious adherence to the requirements of human subject research. If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me or the IRB Office, or visit our website at <http://www.irb.illinois.edu>.

Sincerely,

Sue Keehn, Director, Institutional Review Board

c: Chung Sup Lee

APPENDIX B:
INFORMED CONSENT FORM

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Vice Chancellor for Research
Fourth Floor Swanlund Building
601 East John Street
Champaign, IL 61820-5711



IRB Office
(217) 333-2670 Voice
(217) 244-3716 Fax
irb@uiuc.edu E-mail

August 29, 2006

Megan Janke
Department of Recreation, Sport and Tourism
104 Huff Hall
MC-584

RE: *Leisure Activities in Later Life*
IRB Protocol Number: 07024

Dear Megan:

Your response to stipulations for the project entitled *Leisure Activities in Later Life* has satisfactorily addressed the concerns of the UIUC Institutional Review Board (IRB) and you are now free to proceed with the human subjects' protocol. The UIUC IRB approved, by expedited review, the protocol as described in your IRB-1 application with stipulated changes. The expiration date for this protocol, UIUC number 07024, is 8/28/2007. The risk designation applied to your project is *no more than minimal risk*. Certification of approval is available upon request.

Copies of the enclosed date-stamped consent forms must be used in obtaining informed consent. If there is a need to revise or alter the consent forms, please submit the revised forms for IRB review, approval, and date-stamping prior to use.

Under applicable regulations, no changes to procedures involving human subjects may be made without prior IRB review and approval. The regulations also require that you promptly notify the IRB of any problems involving human subjects, including unanticipated side effects, adverse reactions, and any injuries or complications that arise during the project.

If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me or the IRB Office, or visit our Web site at <http://www.irb.uiuc.edu>. Some brief guidelines are enclosed for your information.

Sincerely,

A handwritten signature in cursive script that reads "Sue Keehn".

Sue Keehn, Director, Institutional Review Board

Enclosures

c: Laura Payne

**APPENDIX C:
QUESTIONNAIRE**

DEMOGRAPHICS

Age (in years) _____

1. Gender

_____ 1) Male _____ 2) Female

2. Education

_____ 1) Primary school
_____ 2) Middle school
_____ 3) High school
_____ 4) College/University
_____ 5) Graduate School

3. Race

_____ 1) American Indian or Alaska Native
_____ 2) Asian
_____ 3) African American or Black
_____ 4) Native Hawaiian or Other Pacific
Islander
_____ 5) White or Caucasian
_____ 6) Hispanic or Latino

4. Work status

1) Work full-time _____
2) Work part-time _____
3) Homemaker _____
4) I am retired _____

5. Marital status

_____ 1) Married
_____ 2) Divorced
_____ 3) Widowed
_____ 4) Never married

6. Illness

- Do you have a chronic illness or disability?
1) No _____
2) Yes _____
-> Please describe

SERIOUS LEISURE

The purpose of this questionnaire is to explore the nature of free time pursuits as they occur in leisure, outside of work. Please take a moment and think of the different activities in which you participate when you have free time. Once you have thought of and identified your free time activities, please list up to 3 of your favorite free time activities:

7. _____ (free time activity)
8. _____ (free time activity)
9. _____ (free time activity)

From the above list of your favorite free time activities, please take a moment to choose a free time activity, among all the others, that you are the most **serious** about. Please choose an activity, that in comparison to the others, is one in which you feel the most committed to and **serious** about. Please choose an activity that you put more effort into, compared to other activities that you do, because you are **serious** about it.

Once you have thought of and identified the free time activity that you are most **serious** about, please write that activity in the blank:

10. _____ (Serious free time activity)

Please answer the following questions regarding serious free time activity that you listed above.

11. For the Serious leisure activity listed above, please rate how physically, cognitively and socially stimulating the activity is. **Please place an “x” in the box that represents how stimulating the activity is:**

	Not at all	Slightly	Moderately	Quite a bit	Very much
Physically stimulating					
Cognitively stimulating					
Socially stimulating					

12. Please write in the name of the serious free time activity you listed in **Question 10** in the blank spaces below. Then, check the box that best represents how much you agree or disagree with each of the statements below.

		Completely Disagree	Mostly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Mostly Agree	Completely Agree
A	I overcome difficulties in _____ by being persistent.									

		Completely Disagree	Mostly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Mostly Agree	Completely Agree
B	I try hard to become more competent in _____.									
C	I feel that I have made progress in _____.									
D	There are defining moments within _____ that have significantly shaped my involvement in it.									
E	_____ has added richness to my life.									
F	I make full use of my talent when _____.									
G	I demonstrate my skills and abilities when _____.									
H	_____ for me is an expression of myself.									
I	_____ has improved how I think about myself.									

		Completely Disagree	Mostly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Mostly Agree	Completely Agree
J	_____ provides me with a profound sense of satisfaction.									
K	_____ is enjoyable to me.									
L	I feel revitalized after _____ time.									
M	I have received financial payment as a result of my _____ efforts.									
N	I enjoy interacting with other _____ enthusiasts.									
O	I feel important when I am a part of my _____ group's accomplishments.									
P	It is important that I perform duties, which unify my _____ group.									
Q	I share many of my _____ group's ideals.									

		Completely Disagree	Mostly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Mostly Agree	Completely Agree
R	Others that know me understand that _____ is a part of who I am.									

FLOW EXPERIENCE

The following quotations are from 2 different people who are describing an experience they have had during an activity. Please read the following quotations carefully.

α — “I am so involved in what I am doing. I don’t see myself as separate from what I am doing.”

β — “My mind isn’t wandering. I am not thinking of something else. I am totally involved in what I am doing. I don’t seem to hear anything. I am less aware of myself and my problems.”

13. Have you had the above experience during the activity that you chose as a serious leisure activity? Please check the line below that reflects how often you have had the above experience.

- _____ 1) None of the time
- _____ 2) A little of the time
- _____ 3) Some of the time
- _____ 4) A good bit of the time
- _____ 5) Most of the time
- _____ 6) All of the time

14. Please write in the name of the serious free time activity you listed in **Question 10** in the blank spaces below. **Then, check the box that best represents how much you agree or disagree with each of the statements below.**

		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A	When I was involved in _____, I forgot about everything else					
B	I paid very close attention to _____ I was involved in.					
C	During _____, there were times when things were going so well, I felt I could do almost anything					
D	I forgot my worries during _____ I was involved in.					
E	I thought less about my problems during _____.					

HEALTH AND WELL-BEING

15. Check the box that best represents how you feel about each of the statements below.

		Hardly Ever	Sometimes	About half the time	Most of the time	Almost always
A	I manage to do the things that I need to do to take care of my home and to take care of myself (eating, bathing, dressing).					
B	I have been able to cope with the changes that have occurred to my body as I have aged.					
C	I look forward to the future.					
D	I feel able to deal with my own aging					
E	I feel able to cope with life events					
F	I can come up with solutions to problems.					
G	I am good at thinking of new ways to solve problems.					
H	I enjoy doing creative new things or making things.					
I	I am in a positive, pleasant mood					

		Hardly Ever	Sometimes	About half the time	Most of the time	Almost always
J	I think of my loved ones who have passed away and feel close to them.					
K	I spend time in prayer or doing some kind of religious activity					
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
L	As I have aged, the way I think of the world has changed.					
M	I would rather have a few close friends than many casual ones.					
N	Sometimes there can be two right answers to a problem or situation					
O	A relationship with God or some higher power is important to me.					
P	I feel interest in/concern for the next generation					
Q	My life is meaningful					

		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
R	I am overall satisfied with my life right now.					
S	I feel that I serve a purpose in this world					
T	Being the age that I am now is as good or better than I thought it would be.					

**APPENDIX D:
APPROVAL OF SLIM SCALE**

On Mon, Oct 4, 2010 at 6:14 PM, Gould, James <James.Gould@unco.edu> wrote:

Hey Chungsup,

I have recently developed an 18 item measure but the manuscript for its publication is currently in progress. As you are well aware, citing the work is the usual expectation although it's yet to be published. Feel free to include your major advisor in our email exchange so we make the best decision given your timeline.

Attached is the 18 item measure, same scoring format. As for users of the SLIM, some include us with data or co-authorship, but feel free to use it for your thesis.

Keep me posted -j

From: Chungsup LEE [mailto:lee782@illinois.edu]
Sent: Sat 10/2/2010 7:40 PM
To: Gould, James
Subject: Regarding SLIM

Hello Dr. Gould

I'm Chungsup Lee and I'm a graduate student in University of Illinois. While I was reading your article 'Development of the Serious Leisure Inventory and Measure', I found that SLIM is interesting. However, I was wondering if there is shorter form than 54, since my masters' thesis will be focus on older adults and need to measure flow and successful aging as well. I hope this request doesn't bother you or anything. Thank you so much for your help in advance.

Sincerely
Chungsup

APPENDIX E: APPROVAL OF FLOW SCALE

☆ from **Amy Collins** amylovecollins@gmail.com [hide details](#) Jan 5  [Reply](#) ▼

to Chung Sup Lee <leechungsup@gmail.com>
date Wed, Jan 5, 2011 at 10:41 AM
subject Re: Regarding Flow Scales
mailed-by gmail.com
signed-by gmail.com

Hi Chungsup,

I attached the flow scales that we used in our flow study. Each participant filled out the full scale for seven days. I actually can't remember exactly how we used the measures in the paper-- it should be described in the measures section of the article. We dichotomized "presence of flow" to indicate 1 if there was a flow experience on that day and 0 if there wasn't.

We designed these scales using Csikszentmihalyi as a guide, so please cite us if you use them in your study. Also, we'd appreciate it if you don't forward them to anyone else without contacting us first.

Good luck!

Amy
- Show quoted text -

 **Flow questionnaire 1R.doc**
129K [View](#) [Download](#)

[Reply](#) [Forward](#) [Invite Amy Collins to chat](#)

☆ **LEE Chungsup** to Amy [show details](#) Jan 6 [Reply](#) ▼

Thank you for your help Dr. Collins.
I will definitely cite you guys, if I use this scale. By the way, is it ok to share this scale with my advisor? :) thank you again and if it is ok with you, I would like to ask some questions about scale near future.

Best regards,
Chungsup
- Show quoted text -

APPENDIX F: APPROVAL OF SAI SCALE

★ **Chung Sup Lee** to MeredithTroutm.

[show details](#) Feb 24 [← Reply](#) ▼

Hello. I'm Chungsup Lee at University of Illinois in Recreation, Sport, and Tourism Department. I'm a master's student and working on my thesis now. I have read your article " Measuring Successful Aging in Southern Black Older Adults" and I really like it. Especially, I was interested in Successful Aging Inventory (SAI) scale and thinking about using this scale in my study. So.. I was wondering if I can get a copy of the SAI scale from you and ask some questions about it.

Thank you so much for your help in advance. I hope this didn't bothered you. Thank you again.

Sincerely
Chungsup

—

ChungSup LEE
Master's student

Dept. of Recreation, Sport and Tourism
University of Illinois at Urbana-Champaign
104 Huff Hall
1206 South Fourth Street
Champaign, IL 61820

Cell: [217-419-2485](tel:217-419-2485)
email: lee782@illinois.edu

[← Reply](#) [→ Forward](#)

★ **Troutman, Meredith** to me

[show details](#) Feb 24 [← Reply](#) ▼

You are welcome to the SAI. I would only ask that you share with my the psychometric properties and scores obtained you obtain when you administer it.

Meredith Troutman PhD, PMHCNS-BC
Assistant Professor-School of Nursing
Gerontology Program Affiliate
[\(704\) 687-7973](tel:704-687-7973)