

Innovation Among Older Adults with Chronic Health Conditions

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Abstract

Building on the innovation theory of successful aging (Nimrod & Kleiber, 2007), this paper explores the place and value of innovation in leisure activities among older adults living with chronic health conditions. The study utilized in-depth semi-structured interviews with 17 older adults with chronic health conditions, and examined the patterns, meanings and perceived benefits of innovation. Results indicated that regardless of the trigger for innovation, the health condition was the precursor for innovation in most cases. Innovation in activities tended to protect a sense of internal continuity (self-preservation innovation). This seemed to have a positive impact on participants' well-being. The findings suggest that innovation can play a role in the adaptation to declined health and physical impairments, and adds further development to innovation theory.

KEYWORDS: Constraints, Innovation, Leisure, Self-preservation

With lower mortality rates and longer life expectancy, more people are living with chronic health conditions that affect their quality of life (Schultz & Kopec, 2003; Statistics Canada, 1999). Therefore, it is critically important to determine ways to help older adults to successfully adapt to the challenges associated with living with a chronic health condition. Since active engagement in personally meaningful activities is central to physical and psychological well-being in later life (McPherson, 2004; Stobert, Dosman & Keating, 2006), one of the most significant challenges is facing the constraints that restrict preferred activities.

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The purpose of this study was to examine older adults' response to activity restrictions or constraints with an eye toward understanding the role of innovation in adapting to disability and loss in later life. The authors were specifically interested in new activities following the onset of a physical health condition, and focused on the patterns, meanings and perceived benefits of innovation in leisure activities as an integral part of the process of coping with declining physical health. Continuity theory (Atchley, 1989, 1993, 1999) and selective optimization with compensation (Baltes & Baltes, 1990) are two aging theories that help explain adaptation to aging-related losses. Innovation theory (Nimrod & Kleiber, 2007) provides an alternate perspective on the role of new activities in aging. This article starts by reviewing current aging theories, including innovation theory (Nimrod & Kleiber, 2007), which provided the primary theoretical framework for this investigation, and continues by presenting results from in-depth interviews with older adults with chronic health conditions. It ends by discussing: the contribution of the findings to confirming and refining innovation theory, the interconnections between the three theories and the unique contribution of innovation theory to understanding the role of new leisure-related activities in the process of adapting to a chronic health condition.

Literature Review

Three aging theories form the theoretical foundation of how the authors tried to understand the meanings and benefits of innovation in activity patterns when living with a chronic health condition: continuity theory, selective optimization with compensation, and innovation theory. Each is briefly described below and studies that have examined changes and continuity in leisure-related activity patterns and meanings from these theoretical perspectives are presented.

Continuity Theory, SOC, and Leisure

Continuity and change in leisure activity patterns play an important role in the adjustment processes associated with aging (Kelly, 1993; Kleiber, 1999). In offering an explanation for continuity's importance for well-being in later life, Atchley (1989, 1993, 1999) proposed continuity theory. Continuity theory posits that continuity is a primary adaptive strategy for dealing with changes associated with normal aging. Atchley argued that individuals tend to maintain continuity of psychological and social patterns adopted during their life course (e.g., attitudes, opinions, personality, preferences, and behavior) by developing stable activity patterns that will help them to preserve earlier ones (Agahi, Ahacic & Parker, 2006; Finchum & Weber, 2000). Atchley (1993) distinguishes between internal and external continuity, with internal continuity referring to continuity in one's psychological characteristics and self-perceptions and external continuity reflected in maintenance of roles and activities. Several scholars (e.g., Burnett-Wolle & Godbey, 2007; Nimrod, 2007) had noted that much of the leisure research has focused on studies of changes and continuity in leisure activity patterns (external continuity) and less attention has been given to examining the role of leisure in preserving internal continuity.

There is some preliminary support, nonetheless, for the centrality of continuity through leisure in studies involving adults who have experienced a traumatic injury (Kleiber, Brock, Lee, Dattilo & Caldwell, 1995), live with a chronic illness (Hutchinson, Loy, Kleiber, & Dattilo, 2003) or are adapting to age-related changes (e.g., Dupuis & Smale, 1995). The ability to continue or return to preferred leisure activities, as well as continuity of significant past relationships, has been found to preserve a sense of internal continuity in the face of physical losses (Kleiber et al., 1995; Kleiber, Hutchinson & Williams, 2002). Activities that promote a sense of continuity are also seen as adaptive in the face of aging-related changes. Dupuis and Smale (1995) suggested that for older adults continued engagement in lifelong interests in hobbies “may satisfy more personal needs—the needs for personal achievement, self-expression, self-fulfillment, and recognition—and in turn, contribute to higher psychological well-being and life satisfaction” (p. 84).

While the above researchers have argued that familiar leisure activities that are personally expressive can contribute to continuity in self-perceptions and improved well-being, their research has not explicitly examined the adaptive potential of *new* activities in preserving internal continuity following a negative life event or when living with a chronic illness. This is an important focus of the current study.

Critiques of continuity theory also question whether pursuit of external continuity is adaptive in the face of losses which may constrain or prevent one from engaging in previously-enjoyed leisure pursuits (Burnett-Wolle & Godbey, 2007; Menec, 2003). In fact, Atchley (1989) acknowledged that continuity theory is not a useful tool for understanding the external reality of individuals who experience what he called “pathological aging.” Nonetheless, there is a need for further research to understand what role, if any, continuity plays in living with a chronic health condition in later life.

An alternate aging theory—selective optimization with compensation (SOC; Baltes & Baltes, 1990; Baltes & Carstensen, 1999)—accounts for both change and continuity in activities in response to limitations in later life. Essentially, the SOC model suggests that it is adaptive and healthy to respond to limiting factors in the environment (including one’s own health challenges) by being selective about activities of choice, abandoning those that are less personally meaningful and compensating in whatever way necessary to optimize the more restricted number of alternatives. Studies with older adults who live with a chronic illness have demonstrated that people will often find creative ways to accommodate their impairment in order to optimize involvement in preferred leisure activities (e.g., Gignac, Cott & Badley, 2002; Wilhite, Keller, Hodges & Caldwell, 2004). There is a need to examine the adaptive potential of adopting new activities as part of the SOC process in the face of a chronic health condition.

Conceptual Overlaps Between SOC and Continuity Theory

Atchley’s (1989) initial descriptions of continuity theory hint at the conceptual overlaps with processes of SOC when he wrote:

As changes...free people from external role demands, they are freer to concentrate their activities in areas they define as their strengths and to avoid areas they define as their weaknesses. Continuity of activities, skills, and environments is a logical result of leading to one's strengths to get optimum satisfaction with life. (p. 188)

Atchley (1993) suggested a reciprocal process of influence, with continuity influencing decisions regarding the selection of activities (external continuity) and the successful use of SOC processes resulting in the maintenance of internal continuity: "Obviously, to implement this [SOC] model, the person would have to employ some concept of continuity in the selection of activities to optimize" (p. 15). Baltes and Baltes (1990) also indirectly relate processes of SOC to continuity. They describe that access to resources, including skills, knowledge and previous experiences in activity domains become latent reserves that can be drawn upon in times of later loss. They also describe a resilient self in old age; resilience implies the preservation of selfhood in the face of adversity. Thus, continuity can be considered both a resource for and outcome of the SOC process in adapting to living with a chronic health condition.

In addition to better understanding how these processes of SOC and continuity overlap, it is important to know how new activity engagement influences each. What is ambiguous in both continuity theory and SOC is their treatment of new activities. Baltes and Baltes (1990) did suggest that loss-based selection may result in the transformation of life goals or new life domains (which could include new domains of leisure activity involvement). They also suggested that through learning new skills people can compensate for losses in physical or cognitive function. Again this may include, it seems, new activities that enable the pursuit of old life goals. Similarly, in his theory of continuity, Atchley (1989, 1993) suggested that people develop skills and knowledge in *domains* of activity, such as art, music or sport, which allow for exploration within new forms of activity engagement while still maintaining a sense of continuity or sameness. He explained:

The specific activity a person selects for stimulation may be new but the domain is usually not... We need to be more sensitive to abstract perceptions about domains of proficiency and preference that allow changes most people on the outside might view as significant to be defined by the individual as merely an offshoot from a well-established branch. (1989, p. 188)

He went on to use the example of a performing musician who is unable to continue to playing but may turn to booking performances, "a change that preserves the identity with music and continuity of environment and relationships by shifting to another aspect of that domain" (Atchley, 1989, p. 189). This same example could be assessed from an SOC or an innovation theory perspective.

There is a need to better understand the role of new activities in adapting to aging-related losses. In addition, rather than merely accommodating increasing constraints, are there times when activity restrictions may actually lead to the exploration of new opportunities, and in turn may be "embraced for its life enhancing properties" (Kleiber, McGuire & Damali, 2004)? Here is when innovation may be relevant.

Innovation Theory and Leisure

Innovation at an advanced age is a relatively unexplored phenomenon. A major reason is that most evidence for change in activity in later life is associated with reduction of the levels of activity or simple substitution of less challenging alternatives (Armstrong & Morgan 1998; Bennett, 1998; Iso-Ahola, Jackson & Dunn, 1994; Janke, Davey & Kleiber, 2006; Lefrancois, Leclerc & Poulin, 1998; Strain, Grabusic, Searle & Dunn, 2002; Verbrugge, Gruber-Baldini & Fozard, 1996). Another reason for neglecting innovation at an old age is that most previous research suggested that the tendency for innovation in later life is rather rare (Atchley, 1999; Dumazedier, 1972; Iso-Ahola, Jackson & Dunn, 1994; Kelly, 1987; Long, 1987). However, this was recently challenged by an Israeli study, which showed that half of recently retired individuals added at least one brand new activity to their leisure repertoire after retirement (Nimrod, 2008).

In a study by Nimrod and Kleiber (2007), the issue of innovation at an advanced age was moved to center stage. This exploratory study, which utilized a qualitative approach with a 'high probability' sample of adult learners, led to the suggestion of innovation theory. According to innovation theory:

1. Innovation may result from various triggers. While some of them are internal, others are external, instrumental or even imposed. However, in most cases, the motivation for innovation is intrinsic or a combination of intrinsic and extrinsic.
2. While in some cases innovation represents an opportunity for renewal, refreshment and growth that is continuous in some respects from earlier interests and capacities (self-preservation innovation), in others it represents an opportunity for reinvention of self (self-reinvention innovation).
3. There is a consistency within individuals with regard to the type of innovation to which they are attracted: while some seek different ways to reinvent themselves, others find new ways to preserve their existing sense of self.
4. Innovation has a positive impact on elders' well-being.

The definition for innovation, based on innovation theory, is simply adding a new activity to the leisure repertoire. It is important to clarify that this definition refers to the individuals' subjective perceptions of the activity. Therefore, while the new activity may seem similar to a former or current activity, it is the participant's view that classifies it as new. In addition, from this perspective, innovation in activity patterns can be rather minor changes; starting to use a computer or switching from walking to jogging may be considered innovation by individual participants. This perspective is very different than definitions for innovation in other disciplines. In many fields (e.g., in the arts, economics, business and government policy) the term innovation refers to both radical and incremental changes in thinking, in things, in processes or in services; something new must be substantially different to be innovative (Fagerberg, 2004).

It is also important to distinguish between innovative activity and creative activity. Creative activity (whether artistic or not) is a process whereby the individual seeks an original solution to a problem or challenge at hand (Mariske & Willis,

1998). Creative and innovative activities share few features. Both involve openness, risk taking, flexibility and adaptability. But while creativity is about seeking for new solutions, innovative activity is about seeking for new experiences. In addition, creativity is about different paths to the same goal, while innovation may lead to achieving new goals.

Literature on creativity and aging (e.g., Cohen, Perlstein, Chapline, Kelly, Firth & Simmens, 2006; Fisher & Specht, 1999) showed that creativity contributes to older adults' well being and suggested that it promotes better management of everyday lives and may be viewed as a *coping mechanism* with changing circumstances. Nimrod and Kleiber (2007) suggested considering innovation as a *growth mechanism* that enables one to broaden and deepen the sense of meaning in life, which leads to greater well-being and satisfaction with life. In quantitative research with recent Israeli retirees, Nimrod (2008) demonstrated that *innovators* (i.e., people who took up at least one brand new activity after retiring from work) had significantly higher life satisfaction than *non-innovators*. In addition, one of the differentiating life satisfaction dimensions was the enjoyment of daily activities, which indicated that the difference in overall life satisfaction was, to some extent, associated with activity patterns. These findings provided preliminary support for Nimrod and Kleiber's (2007) argument that innovation is associated with enhanced well-being among older people, but further research is required to explore the dynamics by which innovation at an old age contributes to well-being.

The present study was designed to explore the characteristics, meanings and benefits of innovation among seniors who live with chronic health conditions. As more people are living with chronic health conditions, this study tried to examine whether innovation can play a role in the adaptation to changes in physical health that limit everyday activities.

Method

This study applied a 'grounded theory' approach. Grounded theory, as defined by Strauss and Corbin (1998, p. 12), is a "theory that was derived from data, systematically gathered and analyzed through the research process." It is a theory that "emerges from that data" instead of being "preconceived" in the researcher's mind, and it is "likely to offer insight, enhance understanding and provide a meaningful guide to action." The basic idea of this approach is to read (and re-read) a textual database and discover or label categories, concepts and properties and their interrelationships.

Sample

In-depth interviews were conducted with 17 older adults living with chronic health conditions. Each had added at least one new activity to their leisure repertoire since the occurrence/diagnosis of their health condition. The authors preferred participants who had experienced a relatively recent diagnosis or onset of the health condition, as they wanted to explore people's psychological responses to living with activity restrictions. Therefore it was decided to not include people who were diagnosed more than ten years ago.

After obtaining ethical approval to conduct the study, study participants were recruited by advertising (with a poster and take-away information pamphlets) in one local health center, two seniors' centers, and three community recreation centers in a mid-sized city in eastern Canada. In addition, a short announcement was placed in a community newspaper. Potential study participants were directed to contact the second author by telephone. A verbal description of the study was provided to each potential participant by telephone; informal questions were also asked to determine eligibility to participate in the study. The eligibility criteria were: age 55 and over, living with a physical condition that occurred no more than ten years ago and that limits everyday activities, and "in spite of the activity restrictions, have taken up a new activity." If potential participants met the study criteria and expressed interest in the study, a meeting time and place for the interview was set up. Interviews were transcribed and analyzed immediately after they were conducted, and recruitment continued until new data did not provide any new understanding.

Respondents were eight males and nine females ranging in age from 58 to 87 (mean = 72). All were retired (or were not working outside the home in a paid position) at the time of the interviews. Of the 17 participants seven were stroke survivors, four lived with some form of arthritis, two people were cancer survivors, two were living with Parkinson's disease (one of whom had also had a stroke), and two had Fibromyalgia. Six were living with multiple chronic illnesses (three of them had long standing illnesses or impairments in addition to a newer one/s). The average time since the occurrence or the diagnosis of the most recent health condition was 5.4 years. A summary of participant background information is provided in Table 1.

Interview format

Semi-structured interviews were conducted between August and December 2007 at the respondents' homes (except for two interviews that were conducted in the second author's office). The interviews lasted an average of one hour and 30 minutes, ranging from 50 minutes to three hours and 30 minutes. Interviews were audio-taped using a digital audio recorder. After informed consent was obtained, respondents were asked to begin the interview by giving a short description of their personal history and their health condition. They were then asked to describe how their activities had changed since the occurrence/diagnosis of their health condition. Participants, who had several chronic conditions, some for over 10 years and even lifelong conditions, were asked to reflect on their *most recent* health changes only. When they mentioned starting a new activity, they were asked if they had ever participated in this activity prior to the onset of their health condition, to make sure the activity was really new and not a past activity they had returned to. Then, they were asked to describe why and how they became involved with that activity, what they liked about it and what it meant for them. At a later stage of the interview they were also asked to describe their sense of well-being, and to evaluate the way they had coped with the constraints and changes in their lives following the onset of their health condition.

Table 1: Study Participants

Pseudonym	Age	Health Condition(s)	Time Since Onset	Marital Status	Past Occupation	Residence/ Relocation Y = Yes, N = No
Betty	82	Stroke	Unknown**	Widowed	Office work	Condo., Y
Grace	72	Asthma (AS), cellulitis	AS: 40 yrs, Cellulitis: 5 yrs	Widowed	Volunteer work, homemaker	Single family house, N
Helen	63	Fibromyalgia	6 years, progressive onset	Divorced	Office work	Apartment, Y
Alice	67	Stroke	2 years	Married	Sales clerk	Apartment, N
Felice*	67	Stroke (S), Parkinson's (P)	S: 5 years P: 3 months after stroke	Divorced (after stroke)	Homemaker	Subsidized seniors' apt. building, Y
Stephanie	70	Lyme disease (L.D), Arthritis, Fibromyalgia (FM)	L.D.: 10 yrs A: 10 yrs F.M.: ?	Divorced	Furniture designer	Apartment, Y
Anne	72	Stroke	7 years	Widowed	Office work	Apartment/ relative's home, Y
Marie	58	Cancer	1 year	Divorced	Teacher, boarding home	Single dwelling house, N
Kathryn	68	Arthritis	10 years, progressive onset	Married	Military, business owner	Single dwelling house, N
Marcel	65	Parkinson's	9 years, progressive onset	Married	Nursing attendant, sign painter	Subsidized seniors' apt. building, Y
Bruce	67	Back Injury (B.I.), Stroke	B.I.: 10 years Stroke: 6 years	Married	Crane operator	Mobile home, N
Jim	78	Stroke	6 years	Married	Police	Condo., Y
Frank	68	Arthritis (A), diabetes (D)	A: 4 years D: Un- known	Married	Military, engineering, business owner	Single family house, N
Harvey	85	Arthritis, Hearing Impair. (H.I.)	A: 4 years H.I.: lifelong	Divorced	Odd jobs	Subsidized senior's apt. building, Y
Jack	88	Heart disease	10 years	Widowed	Military	Single family house, N
Les	87	Stroke	6 years	Married	Engineer	Single family house, N
Steve	60	Cancer	2 years	Widowed	Teacher, counselor	Single family house, N

* Asian origin. All other participants were Caucasian

** She had a series of strokes that were diagnosed retrospectively, so no one knows when they exactly happened.

The interview process followed the principles of the grounded theory approach. The authors were analyzing the data while still collecting new data, and modified the interview questions based on the findings. Recruiting new participants was stopped only when new data did not provide new understandings. In addition, once preliminary interpretations were made, participants were contacted to provide a “member check” as to the accuracy of the interpretations of material attributed to them. Only two of the participants provided feedback; both indicated that the preliminary themes reflected their personal experiences and suggested no new insights.

Data Analysis

Interviews were professionally transcribed. The transcriptions were subjected to qualitative data analysis techniques, implementing within and cross-case analysis and then constant comparison strategies (Strauss & Corbin, 1998), to identify activities of interest, the circumstances surrounding them, and their meaning to the participants.

Data reduction began with creating a template for each respondent, organized by general background, medical condition and current limitations, changes in leisure, innovation, and well being. The next step was using open coding (fracturing the data into concepts and categories), while also reviewing the transcripts several times for elements that may have been missed. Within the innovation category, the data associated with each new activity were further analyzed according to the type of activity, the trigger for adding the activity, the relationship between the health condition and activity, perceived benefits, inconveniences and required adjustments. In order to maintain data reliability the open coding was conducted separately by each author, and then analyses were compared and discussed. In the rare cases of disagreements between the authors, data were left as non-categorized.

Once this initial coding framework was established, axial coding (making connections between a category and its sub-categories) was used to identify variations found within each category, moving back and forth in collaboration between preliminary sub-groupings and revised versions to refine the codes and settle on subcategories. Later on selective coding (making connections between discrete categories) was implemented, and the categories that have been developed to form the initial theoretical framework were integrated. Organizing the data in that manner enabled an examination of the dynamics between triggers, behaviors, benefits and meanings of innovation. Once preliminary interpretations were made, pseudonyms were created and irrelevant personally identifying details were eliminated to assure confidentiality.

Constant comparison between investigators’ interpretations, between different segments of individual transcripts, and between different participants’ transcripts enabled generating preliminary and refined subcategories, axial links, and themes. Reflexive and theoretical notations were also used to refine the analysis and shape interpretations. Theoretical propositions associated with innovation theory (Nimrod & Kleiber, 2007) provided the primary theoretical framework for interpreting the results.

Findings

The number of new activities (i.e., never done before the onset of health condition) per person ranged from one to seven, with a mode of 3 and an average of 3.6 new activities. The total number of new activities was 62 for the entire sample. The types of activities that attracted most innovation were volunteering (19 activities); social activities, such as participation in disability-specific club or social groups (17 activities); creative or expressive activities such as writing or painting (16 activities); physical activities such as exercise groups (16 activities); and intellectual activities such as classes, writing, lectures and computer use (11 activities). Other leisure activities that attracted innovation were spiritual activities, such as meditation or church participation (two activities), as well as baking, gardening and caring for a pet (one activity each). Since some activities could be classified in more than one way (e.g., attending “stroke club” meetings, which was classified as both social and physical activity) the total number of classifications is higher than 62.

Notably, this list of new activities does not reflect the breadth of activities that were part of study participants’ leisure repertoire. Although the study focused on brand new activities (i.e., activities never done before) there were also numerous activities that were continued from the past (e.g., reading, spending time with family, home repair projects, woodworking projects), requiring adjustments and change in participation style and/or frequency at times.

Triggers for Innovation

Examining each innovation “story” revealed various *triggers* (situational causes) for adding a new activity. After grouping the various precipitating reasons for doing all of the activities, these triggers were divided into three groups: ‘Internal,’ ‘External,’ and ‘Instrumental.’

Internal triggers. Internal triggers were: *curiosity, enduring interest, and emotional need.* For example, Alice joined the stroke club because she “wanted to see what it was all about;” Frank started wood carving because he was “always interested in woodworking;” and Kathryn decided to learn belly dancing because she has “been wanting to do belly dancing for a long time.” Helen joined a writing course as a result of both curiosity and enduring intellectual interest: “I’m really interested in writing and I wanted to take a writing course... I have never done any (writing) except journaling on my own, it’s just something that I’ve always wanted to do... I’ve always liked doing that, playing with words I call it.” Alice, on the other hand, started writing as a result of a more emotional need. She started writing to better cope with the fears she had after having a stroke.

External triggers. External triggers included: *someone else’s initiation, activity’s availability, exposure to media, and lack of other people to assume the role.* In most cases, it was someone else’s recommendation, invitation or request that initiated a new activity involvement. For example, Betty joined a church when a friend invited her to come with her for a session; Marie became the chair of a volunteering association because she was asked to take this role; and Felice joined the stroke club because her physician recommended it. As examples of the other external triggers, Bruce started using a computer after his brother gave him one, Kathryn

joined the Red Hat Society after she had read about it in newspapers and magazines, and Les started a newsletter for his local stroke group because there was no one else in the organization willing to fulfill this role. This required him to learn to use a publishing software program.

Instrumental triggers. Instrumental triggers are those that that were associated with a practical purpose: *maintaining or improving health, filling the time, and money.* Several participants started exercising or joined a rehab program in order to maintain or improve their physical, cognitive, or mental health. Bruce, who suffered clinical depression after a severe stroke, became a volunteer driver as part of his psychiatric rehab. Jim reported that he participates in a condominium garden club because he is “trying to keep my brain occupied, try to keep it exercised.” Jim also became involved in recycling because “it keeps me occupied” and because he could “use the funds from our recycling to purchase flowers and things,” and Stephanie sold painted shirts at a public market as a way to earn spending money.

Twenty-three of the triggers for adding a new activity were ‘Internal,’ while 23 were ‘External,’ and nine were ‘Instrumental.’ Three triggers were unknown from the data and four appeared to be both internally and externally triggered (something of personal interest but also encouraged to initiate the activity by someone else). There seemed to be some association between the trigger and the activity type. Activities that were internally triggered tended to be creative or intellectual (15 out of 23), and activities that were instrumentally triggered tended to be physical (5 out of 9).

Relationships Between Health Condition and Patterns of Innovation

In addition to examining the immediate situational triggers for adding new activities, the impact that the chronic health conditions had on innovation in activity patterns was also investigated. Data analysis led to identifying four types of associations between health condition and innovation: ‘Direct association,’ ‘Creating loss and need for substitution,’ ‘Catalyst for innovation’ and ‘No impact.’

Direct association. Direct association referred to the decision to take up a new activity as a direct result of the health condition or in response to feelings and thoughts (e.g., fears or sense of vulnerability) related to the health condition. The most prominent example of this was the decision to initiate a new activity as a way to continue one’s recovery (e.g., following formal stroke rehabilitation) or to improve or maintain physical health or emotional well-being. This was the case of all stroke survivors who joined a “stroke club” which provided both an exercise program led by a volunteer physiotherapist and social activity. This was also the case for those who started exercising at home or joined a health club, such as Bruce who goes to the YMCA twice a week just “to try to keep up what I’ve got” and because “somebody is keeping an eye on your progress and encouraging you.” Interviewees also joined disability-specific activity groups, such as a stroke bowling group or arthritis exercise group, because they felt the leaders and co-participants were more accepting of their limitations, which contributed to their sense of comfort and belonging. Talking about an exercise program for stroke survivors, Anne stated, “you go at your own pace, you can only do what you can do. There

are some of them in there only have one leg, so they sit in the wheelchair so they can't do all the exercises. Same with me, I can't do everything."

Meditation, reading self-help books, volunteering, spending time with a pet and doing art projects were other examples of new activities study participants intentionally initiated to help themselves maintain their mental health or well-being. Some participants expressed that while they joined a support group initially to learn more about their condition, participation evolved to be more of a social group or mutual support group, where they provided emotional support to others. Alice explained that she continues to go to the stroke club, not because she feels she needs it, but because "It's an outlet and I like the people and I think there's some people there that need a friend." After her stroke, Alice also turned to writing:

I was scared. I was terrified when I was left alone for the first time, and I don't think that I was ever that scared in my life. Q: So does writing it down help you in some way to cope? Oh yes, once you get it from the brain to the paper... it works.

By writing she was able to meet the need to express her emotions and fears.

Creating loss and need for substitution. While the chronic health condition often led to abandoning previously enjoyed activities, the participants also responded to the loss of activity by adopting a new activity that substituted the lost one. Marcel, for example, has Parkinson's disease and as a result could not play guitar and drums or paint anymore. However, he was able to preserve his interest in music by organizing music events for fundraising. Likewise, although he could no longer paint, he was able to teach art lessons to preserve his enduring interest in art. Similarly, Felice's art lessons substituted for the stitching, sewing and scrapbooking that she could no longer do since her hands shake as a result of Parkinson's disease:

I can't stitch because of the shaking Q: Are you still able to sew? No... my hands are shaking too much... it's an automatic machine... I had done wedding cakes, crafts, things like that... I have pictures of them... I couldn't continue.

Kathryn was no longer able to endure the intensity of an aerobics workout at a community health club or walking group to which she had previously belonged ("for me to try to get out of the house to go... I used to have to really talk myself into it"), but found she was able to get the physical activity she wanted by following a video-taped workout routine she could do at home. Harvey was formerly a master bridge player ("I had more fun playing bridge than I was going on the boat cruises"), but because severe arthritis limits his mobility and a severe hearing impairment impairs his ability to socialize he now plays bridge on the computer. Notably, he taught himself to use the computer so he could play computer bridge.

Catalyst for innovation. The third way that the health condition impacted innovations in activities was by spurring people on to undertake new activities or by creating the circumstances for innovation. In other words, while the health

condition may have been a catalyst for innovation, the new activity was not undertaken to deal with problems associated with the health condition (as seen in the first condition). Instead, the health condition created the social opportunity (to be in a new role or social context) or personal conditions (willingness or openness to change) that enabled people to explore or expand their potential interests through activity innovations. Jack's decision to take a writing course was less about his health condition (although this certainly spurred on his continued commitment to write) and more about his desire to overcome or transcend his poor past:

I was going to write my story because my grandchildren and great grandchildren... they'll read it. If not, nobody would ever know what it was... I always thought writing would be good.

Similarly, Anne's experiences of stroke recovery led her to writing a book about her life (which also involved having to learn how to use a computer, scanner and publisher software program). In so doing, she came to see herself in a new way:

The day that I got the book back I was floored at the fact that I did this and I didn't have any help at all, mentally or physically. I could not believe I had done it, I was overwhelmed. I think that's what sparked me to keep going... I was 60 so I said well if I'm spared I've got to do something productive.

Likewise, Stephanie believed she had reinvented herself as a strong, capable woman as a result of her decision to honor herself physically, emotionally and spiritually:

My attitude has changed a lot since I became ill... I was like a door mat to people... But now I have a different attitude... if someone says something they don't like about me, I'll just say that's your problem, deal with it.

While her health crisis was a call to action, her changes in how she saw herself in response to the kinds of activities she introduced into her life were as much about her desire to rise above her past experiences of family abuse as they were about recovering from her current health condition.

No association. Finally, there were also many cases in which the health condition did not seem to have any impact. Betty would have probably joined her new church group without having a stroke, Helen would have probably taken the writing course without having chronic fatigue and fibromyalgia, and Frank would have probably started woodcarving without having arthritis in his shoulder. There seemed to be an association between internal triggers and no health impact, and most of the new creative activities were not impacted by the health conditions, but by the decision to take action on an important personal value or life goal.

The health condition had 'no impact' on a total of 24 innovative activities, while in 13 cases the impact was 'direct,' in 16 cases the impact was 'Creating loss and need for substitution,' and in nine cases the health condition was 'Catalyst for innovation.' Therefore, in most cases, the health condition had either direct or indirect influence on adapting a new activity, and therefore served as a precursor for innovation.

Downsides and Adjustments

The road to making the new activities integral part of life was not always easy. In 33 of the 62 activity stories, respondents mentioned some kind of inconvenience or negative aspects. These downsides were divided into three groups of activity constraints: 'Health related,' 'Activity related,' and 'Technical.'

Health related downsides included the physical effort required and the fatigue following participation, constraints on the ability to participate, and sense of insecurity. Activity related inconveniences included too much responsibility, the need to be disciplined, boring meetings, etc. Technical inconveniences included transportation (such as long bus trips), costs, inaccessibility and activity's availability. Of the 33 downsides mentioned, 13 were 'Health related,' 10 were 'Activity related,' and 10 were 'Technical.' However, respondents also mentioned different ways of coping with these inconveniences. All their strategies may be described as *optimization* or *selection* (Baltes & Baltes, 1990; Baltes & Carstensen, 1999). For example, in order not to hurt his arm, Frank used sharper knives for woodworking. In order to avoid the long bus trips to the stroke club, Betty started using the 'Access-a-bus' services. Felice, who has Parkinson's disease, had difficulties in painting, so she tried to avoid vertical lines: "you're not supposed to have lines going up. I'm not doing anything there, my hand is shaking and the brush is going up and down." Grace's innovative activity was spending the weekends at a cottage on a lake, where she could enjoy nature and quiet time for reading. However, being constrained with walking and a "city girl" made her feel uncomfortable about staying there alone: "I'm chicken little I wouldn't stay in the place alone... I stay alone here, I can call 911, I can get a neighbor, the neighbors aren't that close to us down there." Her way to overcome her fears was to never stay at the cottage alone. She either stayed there with her daughter, or invited friends to stay with her. An example for selection is Marie, who had new leadership roles, but felt that some aspects of her roles were too physically demanding. Therefore, she decided to be selective, and stopped taking part in meetings and in street activities. She also tried not to feel bad about it: "I don't apologize for that I just think my head thought it could do it, my body can't follow through on the ideas of my head."

Perceived Benefits of Activity Innovation

There was a wide range of benefits study respondents associated with taking up a new activity in later life and/or following the onset of their health condition, but there was one benefit that was common among everyone. All participants reported that the new activities helped them feel better about themselves, and about their capacity for remaining well despite their health condition. This often related to preserving perceptions that they were "normal," "human," or more than their disability.

Many experienced a sense of pride, competence, or usefulness as a result of their new activity; engaging in the activity enabled them to accept themselves and their limitations more fully, and enabled them to feel they continued to be a contributing or a functioning member of society. Describing what it meant to him to be teaching himself to play the keyboard, Harvey noted "It helps with the assurance that I can still do something" and later added "playing the computer

and other things, it gives me a sense of accomplishment.” In the face of many lost activities, Bruce described what it meant to him to do volunteer driving:

I really enjoy that cause you get to meet people and you're helping people... It gives me a reason to get up in the morning... You get a good feeling that you're capable of doing something. After a stroke you feel kind of worthless, you're dependent on everybody, you can't do anything for yourself.

Describing what it meant to write a book about her experiences of stroke recovery, Anne also explained how this project helped her re-appraise how she saw herself and her life after her stroke:

When I wrote that book I realized that life must go on and even though I was handicapped I was determined to get over what I could help myself... Cause that makes me feel like a human, I'm just like you are.

There seemed to be an association between the health impact and the benefits. When health impact on innovation was 'direct,' the new activity usually led to preserving *capability* and self-perception of 'capable' and 'active.' Several participants indicated they felt they were taking good care of themselves and doing their part to maintain and in some cases improve their physical and mental health. Talking about the reason he chose new activities that would intentionally contribute to staying mentally active, Frank stated: "I find that a lot of times when you're getting older you lose that organizational ability with your brain... whereas doing things like that [wood carving and auctioneering] you have to continue being organized upstairs [mentally]." In addition, some people noted that the activity kept them meaningfully occupied and away from the television. As Jack said, "it's better than just sitting here... if you do you're just going to melt away."

When health impact was not direct (i.e., creating loss and need for substitution or catalyst for innovation), the new activities helped in preserving *meaningful roles* or *self-perceptions*. This was true for activities that substituted for lost activities and provided psychological benefits and meanings similar to the original activity. However, it was also true for many new activities that were adopted as a result of the new circumstances. An example of role preservation is Jim's involvement in the condominium's garden. Six years ago Jim, a retired policeman, suffered a severe stroke that resulted in a partial paralysis of the left side of his body. Before the stroke he was an enthusiastic gardener, but after the stroke he couldn't garden any more. After moving into a condominium, he became an active member at the residents' garden club. The club facilitated his social relationships in the condominium, provided a sense of contribution and essentiality, and also led to enjoyment of the outcome (i.e., the beauty of the garden). In addition, the garden club, while being a new activity, preserved his role as a "gardener" and of a person who devotes his life to public service. Similarly, Bruce's role as the president of a stroke club replaced other leadership roles that he had to give up after having a stroke. Betty's crib games helped her preserve a role of "card player" after bridge became too hard to play ("I couldn't remember, that's a big thing.. That's come about since the stroke...").

It is important to note that some people viewed themselves as “innovators” and “lifelong learners” and thus saw new activities in later life as continuations of the way they had approached their activity involvements throughout their lives. These individuals seemed to take pride in their continuing desire to learn, develop skills and knowledge, and to embrace change; innovations in activities were therefore viewed as part of their overall “attitude” to getting older and extended to how they viewed their health condition. As Frank said, “I think a lot of it is mental attitude...Just because I’m 68 doesn’t mean I need to sit in a chair and rock myself and knit.” Marie’s approach to dealing with her cancer exemplifies this “innovative approach” to living: “there’s no reason to restrict what you do because you’re disabled. It’s defining what you’re able to do and do that.” In addition, participating in an African dance charity event also provided a tangible benchmark against which she could appraise her own adjustment to her health condition: “There’s an amazing consciousness being out in public with one breast and no breast but to actually go and do what I did is... shows that I have accepted my body as it is I guess.”

There were also few cases in which innovation not only served to affirm or preserve valued self-perceptions but also afforded extensions into new domains of *self discovery* and a sense of *transformation*. Such benefits, however, were relatively rare, and tended to occur when the health condition was a catalyst for innovation or when it had no impact. As aforementioned, Stephanie also took her arthritis as a wake up call to start taking better care of herself. She has since transformed her diet and introduced daily exercise and art into her life. Betty, who joined a church after being invited by a friend, felt that she became more spiritual. In addition, she felt that she was being accepted and loved just the way she was. Betty seemed to have an unfinished business with education since she could not complete an academic degree, but it seems that church members did not seem to care about her ‘weaknesses:’

I’m so lucky... [They] are unbelievable, they’re so caring. They’re so kind. I don’t think there’s anybody there without two or three (academic) degrees, but you’d never, ever know it... These people, they’re unbelievable, you can talk about anything to them. They’re so kind and so helpful and so modest.

The benefits and meanings participants derived from their activity innovations enabled people to maintain valued self-perceptions (self-preservation innovation) as well to self-reinvent or transform themselves (self-reinvention innovation) in few cases. Beyond preserving or transforming one’s sense of self, new activities enabled people to feel useful, competent, and accomplished, thus contributing substantially to well-being.

Discussion

The goal of this current study was to further elaborate innovation theory and to explore its contribution to adapting to a chronic health condition in later life. The discussion begins by describing the results in relation to innovation theory. It continues with the connections between the three theories (innovation, continuity and SOC) and ends by considering the unique contribution of innovation

theory to understanding the role of new leisure-related activities in the process of adapting to a chronic health condition.

Innovation Theory

In this current study, analysis of forms and patterns of innovation were derived from a broad examination of the respondents' life story, including former occupation, leisure activities and interests as well as considering the relationship of the health condition to new activities. The findings indicated that in some cases the new activity was adopted in order to preserve or improve one's health condition (and self perceptions that ranged from "capable" to "human"), but in other cases the new activity preserved valued self-perceptions or enabled study participants to experience psychological benefits and meanings similar to those they would have obtained from activities that had to be abandoned as a result of the health condition. As true of any qualitative investigation, one should be cautious when interpreting this study's findings, and relate to participants' reports as subjective perceptions. Nevertheless, the authors feel that the findings indicate that where innovation is possible the well-being of older adults with chronic health condition may be enhanced.

As noted previously, innovation theory (Nimrod & Kleiber, 2007) provided the primary theoretical lens by which these data were analyzed. Innovation theory suggests that: (a) innovation may result from various triggers; (b) innovation in activities is either directed toward self-preservation or self-reinvention; (c) there is a consistency within individuals with regard to the type of innovation to which they are attracted, and (d) innovation has a positive impact on well-being.

In support of the first theoretical proposition for innovation theory (Nimrod & Kleiber, 2007), this study found that innovation in activities was triggered by internal and external factors, as well as for instrumental reasons. Despite their limiting conditions, study participants found the energies to turn interests, needs or curiosity into action. In addition, many were willing to try a new activity when it was suggested, encouraged or recommended by a trusted friend, peer or health professional, or when they expected the activity to be contributing to their physical or mental health. Moreover, in most cases, the health condition had either direct or indirect influence on adapting a new activity, and thus served as a precursor for innovation. Regardless of the trigger, however, for the most part activities were continued because they provided important psychosocial or instrumental benefits and were (or became) personally meaningful to individuals. In other words, the benefits of participating outweighed some of the challenges associated with or constraints imposed by the health condition or people's response to it.

As it relates to the second and third propositions for innovation theory (Nimrod & Kleiber, 2007), the perceived benefits and psychological meanings of innovation were analyzed to understand the impact of the new activity on people's identities and self-perceptions. As noted, two patterns of innovation were evidenced in Nimrod and Kleiber's study: self-preservation innovation (SPI) and self-reinvention innovation (SRI). Whereas SPI reflects continuity in self-perceptions or personal/social roles, SRI involves people coming to see themselves or their lives in a new way. In either case there is the proposition that there is a consis-

tency within individuals with regard to the type of innovation to which they are attracted.

In contrast to Nimrod and Kleiber's study of innovation in later life, in this study there were very few cases in which innovation led to *self discovery* and a sense of *transformation* and may be described as SRI. As a matter of fact, most innovative activities in this study may be described as SPI. Therefore, it is possible to say that there was also a consistency within individuals with regard to the type of innovation to which they are attracted, as all of them mainly demonstrated SPI. Given the significant energy and time needed to continue to work towards improving or maintaining physical or mental health, one can speculate that there was less evidence of SRI than in Nimrod and Kleiber's study of more well older adults because, for the most part, many individuals may have lacked the resources needed to extend beyond managing their health condition to seek personal growth.

A willingness or desire to take on a new activity was viewed by some as symbolic of their "take-charge" approach to aging and to managing their health condition. The new activity reinforced their view of themselves as someone who was aging well *in spite of* their physical health condition, thus supporting innovation theory's fourth proposition that innovation has a positive impact on well-being. Successful experiences of innovation in activities can promote psychological resilience and proactive response to managing one's physical health and psychological well-being.

Innovation, Continuity and SOC

In this study, new activities that helped individuals preserve their existing self-perceptions were usually consistent with old interests, skills and/or relationships. These activities suggested a new path for an old activity, a close substitution for activity that is no longer available, and development of new skills in order to pursue old interests. While the main contribution of such innovation was, at times, a sense of renewal, its more important contribution to well-being seemed to be in helping individuals to maintain or preserve internal continuity in their self-perceptions, valued personal/social roles and life goals and external continuity in their lifestyle patterns (although not necessarily specific activities). The new activity often led to preserving self-perceptions of being 'capable' and 'active.'

These forms of innovation are consistent with what we might see if viewed from the perspective of continuity theory or SOC. In fact, the findings further extend understanding of the role of new activities in adapting to losses associated with a chronic health condition. Continuity theory suggests that people will maintain their external reality (e.g., former activities) and their ways of adapting to change in order to maintain internal continuity. In innovation theory, this same outcome results from self-preservation innovation. The findings reported here suggest that, in the face of restrictions to preferred activity resulting from a chronic health condition, innovation in activities *is* adaptive and can substantially contribute to self-preservation. This idea is consistent with Atchley's (1989, 1993, 1999) description of continuity theory. He states that people's outward behavior may change when experiencing "pathological aging" but, internally, they are trying to preserve continuity, which in turn, promotes well-being. As it relates

to continuity theory, Nimrod and Kleiber (2007) had already explained that innovation may be a tool for preserving a sense of continuity, and explained that while SRI is about both external and internal change, SPI is about external change that may preserve a sense of internal continuity. The present study confirms this suggestion.

Innovation theory is also consistent with SOC, as the idea of *Selection (S)* holds potential for innovation, especially in cases of loss-based selection: “loss-based reorganization can include the development of new goals, a focus on the most important goals, or the adaptation of new standards that can be achieved with the available resources” (Freund & Baltes, 2002, p. 643). While SRI involves setting up new goals, SPI may involve adaptation of new standards. In addition, as our findings suggest, individuals may practice strategies of *Optimization (O)* and *Compensation (C)* when adding a new activity. Notably, in this current study there were clearly forms of *accommodation within the new activities* that were consistent with SOC, such as modifying when or for how long activities were done, modifying equipment or physical environment (e.g., container gardening) or accessing additional services (e.g., accessible transportation). These accommodations enabled people to preserve remaining abilities and strengths and to enhance the enjoyment associated with, and benefits and meanings derived from, the new activity.

Although in the current study participants were asked to tell about a brand new activity they had added to their life since the onset of their most recent health condition, they were not directly asked if they see this activity as a continuation or extension of a past area of interest. Further research is needed to further understand people’s subjective perceptions of the relationships between new and previous activities within broad domains of interest. In addition, there is a need to systematically investigate the role of new activities in relation to continuity and SOC processes.

Innovation, SOC and Continuity in Adapting to a Chronic Health Condition

Innovation, SOC and continuity seem to be relevant adaptive responses to living with a chronic health condition. In fact, it seems unlikely that a person would use one process exclusively (e.g., SOC *versus* innovation); rather successful aging likely requires drawing on a repertoire of strategies to remain engaged and resilient in the face of activity restrictions that may accompany a chronic health condition. The question then is when, and under what conditions, is one or more strategies most adaptive? While further research is needed to answer this question more general conclusions about the role of innovation in adapting to a chronic health condition are offered. Based on this study it is argued that innovation is adaptive when:

1. People have been “innovators” either in their past activity patterns, or in their approach to living, or both.
2. People are *motivated and able* to take up a new activity within a domain of previous interest or to shift their personal goals/self-perceptions to accommodate new activity pursuits.

3. People have the resources necessary (personal, social, physical, cognitive, and/or financial) to successfully undertake a new activity, in spite of experiencing health-related constraints.

Conversely, it is suggested that while previous experiences with innovation may not be necessary for people to experience benefits from innovating following the onset of a chronic health condition, innovation is likely to be a less adaptive strategy (compared to maintaining external continuity or SOC) if the second and third conditions are not present. Further research is needed to determine if these propositions are true for a variety of older adults with chronic health conditions.

In the context of chronic illness it seems even fairly drastic changes in one's self-perceptions and physical abilities could be accommodated in a number of ways through processes of SOC, continuity and innovation. All three seem to work together in optimizing the adaptive potential of older adults with chronic health conditions. The more important issue seems to be retaining enough resources (e.g., energy, mobility, access to transportation, supportive friends) that participation in activities, whether they are old or new, is possible and enables older adults living with a chronic health condition to retain perceptions of competence, control and normalcy. Promoting a broad repertoire of activity involvement (versus specialization) may be most highly adaptive in maintaining a "latent reserve" to reduce the deleterious effects of potential future loss; some people would be able to switch interests without it threatening internal continuity. Further research is needed to test this proposition.

The findings also have implications for continuity theory in suggesting that, under certain conditions, processes of continuity are still relevant in the face of pathological aging. The population under investigation here would likely have fit under Atchley's (1989) defined "pathological aging" by having a physical illness or disease that was not an inevitable aspect of "normal aging." However, the authors would argue that it is not the presence of disease or impairment that determines pathological aging, nor even whether a person is dependent on others for activities of daily living (because seeking help or securing alternative transportation are highly effective forms of adaptation that allow for maintenance of former activity patterns, social roles and relationships). Instead what seems to determine pathological aging is the *inability to reformulate meaningful life goals or maintain a valued sense of self* (e.g., sense of mastery, personal competence) *in the face of disease or disability or to access the necessary resources* (e.g., help, money, energy) *necessary to overcome barriers to preferred activities and access to normative roles and relationships*. So, even in the face of what others may see as formidable physical impairments, if people can continue to maintain core valued relationships, feel some sense of purpose and some form of familiar activity then they are likely to be quite satisfied with life, regardless of the severity of their health condition.

In this study, because of accommodations and innovation in activity patterns most study participants were able to "lead active, satisfying and purposeful lives" (Atchley, 1989, p. 194) specifically *because* they did use SOC, continuity and innovation strategies to adapt to the changes associated with their disease, with the outcome being that they were able to preserve valued self-perceptions and life goals. Atchley (1989) has argued that "Both internal and external continuity help

individuals focus on and maintain their strengths and minimize the effects of deficits as normal aging occurs” (p. 186). It seems the same strategies that would be used to offset the physical and mental changes associated with normal aging are still relevant and valued strategies in the face of a chronic health condition.

Preservation of previous roles and self-perceptions may reduce the negative effect of the chronic health condition on the person’s sense of worth. It may even lead to increased self-worth, as the person is able to innovate albeit facing limiting conditions. The authors tend to agree with Nimrod and Kleiber (2007), who suggested considering innovation as a growth mechanism. However, it is suggested that in the context of living with a chronic health condition, the sense of growth comes not from reinventing one’s self, but from the ability to *resist* the negative psychosocial impacts of the health condition. Kleiber and colleagues (2004) have written about “beneficial constraints,” referring to the ways in which constrained activities may not always have negative effects on individuals if they compel people to take action on important goals. While many people in the current study may not have wanted to acquire their health condition, most seemed willing to “make the best of a bad situation.” To the extent that the health condition led study participants to add new activities to their lives that were intentionally chosen for their potential to improve their health or well-being, they benefited not only in enhanced health but also in terms of reinforcing a view of themselves as capable and competent.

Conclusion

Innovation theory’s unique contribution is in its explicit focus on the role of new activities in adaptation to later life changes and losses. It expands our understanding of the triggers, motivations, dynamics and benefits of innovation in responding to what Atchley (1989) terms healthy and pathological aging. It does not deemphasize the importance of other mechanisms of adaptation (e.g., continuity and SOC), but rather highlights the possible advantages of adding new activities and suggests that for some people and in certain circumstances, well-being is enhanced by a willingness to change, by new experiences, and by finding special meaning in these experiences.

In accordance with the grounded theory approach of Strauss and Corbin (1998) the findings described in this study offer a basis for further development of innovation theory (Nimrod & Kleiber, 2007). Our findings suggest the following:

1. Similar to innovation among healthy older adults, innovation among older adults with chronic health conditions may result from various triggers. While some of them are internal, others are external or instrumental;
2. Changes in health may serve as precursors for innovation, having either a direct or indirect influence;
3. Innovation in declining health may involve various inconveniences, however people find ways to adjust;
4. While innovation among healthy older adults may be either self-preservation innovation or self-reinvention innovation, the main role of innovation among older adults with chronic health condition is preserving a sense of continuity.

This seems to have a positive impact on elders' well-being. In fact, it seems that innovation may take an integral part in the process of coping with declined health and physical impairments.

Several limitations of this current study are acknowledged, including the small sample size, lack of ethnic diversity in the sample and the potential "innovation bias" amongst study participants that limits the applicability of the findings. In particular, given the study criteria (e.g., individuals had to have initiated one new activity since the onset of their health condition to be included in the study) and that individuals self-selected their participation in the study (i.e., they had to call to speak with one of the researchers), this sample may have been biased in terms of being more "healthy" than other older adults who are struggling to manage their chronic health condition and who many not have had the energy or other resources to take up a new activity or even to participate in an interview. There is a need for further research that examines relationships of continuity, SOC and innovation in a larger and more diverse sample of older adults. That said, it does seem the study results provide a small but meaningful contribution to theoretically elaborating the role of innovation in healthy aging.

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