A study on the social behavior and social isolation of the elderly Korea

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INTRODUCTION

Man is ‘a being who lives with others.’ They go on living, while expecting somebody along with their family members to stay with them from birth to the last moment of their life. As Aristotle put it, “Human beings are a social animal,” which strongly means that they have to depend on one another and live together. In other words, it means that they have to take the chain of human relationship among themselves as a fate and go on with their life. As a result, it can be safely said that without opportunities and efforts to form such human relations, they throw away the most basic action as they live as a human race.

Human beings are in pursuit of instinctive happiness from the very moment they were born. Such an instinct to go after happiness is in the opposite direction from the conception of loneliness, isolation, depression and loneliness. For each period of an individual’s life, they will be faced with realities and incidents which stand in the way of seeking after ‘happiness’ as a form of instinct. However, they can wisely tide over those stumbling blocks at a learning level as part of socialization as they were an education process. With that in mind, how wisely can they overcome those hindrances at their golden age which is supposed to be happier than any other period? That is by no means easy. In particular, the problem is more vivid in South Korea. For the elderly in South Korea, which has succeeded in modernizing itself in a condensed manner, an extremely uncommon episode in the international community, it is literally next to impossible to break down fateful hurdles in their life.

In the end, personal social psychological changes arising from a social change from which senior citizens are now suffering in South Korea lead inevitably to a variety of issues. It is social isolation that is at the heart of those issues. Consequently, this study is aimed at presenting what factors are to predict the social isolation of the elderly as an element to prevent the problem of why various matters related to old people are inevitably taking place by carefully examining the meaning of social isolation and prediction factors that personal and regional. Lastly, as a role and challenges of the field of rehabilitation exercise aimed at resolving social isolation should be vitalized such as the development and provision of various relationship-building programs.

Keywords: Social behavior, Social isolation, Korean elderly, Rehabilitation exercise
isolation and the conditions of social isolation that the South Korean senior citizens go through after working on previous studies. I found that few studies on the social isolation of the elderly have been conducted and came to be convinced that the continuous research on this area is valuable, while going on with this research.

THE SOCIAL ISOLATION AT A GOLDEN AGE THAT THE ELDERLY CANNOT AVOID

What is the social isolation?

The conception of social isolation and research on the issue has changed as time passes by. Early studies on the issue were at a stage of confirming what the social isolation really means, and then other studies were conducted to collect related materials and check out samples. Afterwards, they turned into a more advanced ones focusing on the attributes, prior elements, consequences, related conceptions, and context data (Nicholson, 2009). Studies on this theme began to turn their attention to the way social isolation was objectively measured from the way social isolation was subjectively measured. After all, both subjective and objective isolations were measured. On the other hand, Conwell and Wait (2009) divided social isolation into social disconnectedness and perceived isolation.

Social isolation is based on the social relationship and relationship network of humans.

As theories on the social relationship are various, the symbolic interaction theory, first, says that human beings are an active being who interprets, defines, and attaches meaning to the effects from others through interaction, not a passive being who simply reacts to the effects from others, and emphasizes that human beings behave in accordance with such an internal interpretation. Namely, it may be understood that an individual’s behavior is comprehended and made by an interaction with the society to which they belong.

Second, the social exchange theory says that human behavior take root in the principle of economics that it is decided by its expense, and that human beings as a reasonable being choose a situation in which they can get as many profits as possible by maximizing compensation and minimizing expense in the process of interaction between individuals and individuals, between individuals and groups, and groups and groups. In conclusion, the social exchange theory says that an individual begins to behave when his or her profit grows maximized while expense comes from compensation. Nevertheless, the social exchange theory cannot avoid some drawbacks in that the compensation and behavior of human beings cannot be easily defined. From the viewpoint of the social exchange theory, old people who are socially alienated appear to have a limited choice for social ties. It can be explained that the more deficient an old person’s exchange is as to the social relationship, the more likely he or she is to be socially isolated. It means that the level of social interchange and the deficient state of social exchange can be accounted for through social isolation.

Third, the accumulative profit disadvantage theory says that the poor network created through the life processes prior to the old age is connected to the insufficient network or social isolation when old. In addition, the characteristics of each gender structure and restrict resources and origins related to their network for both male and female. These factors act in an additional way or produce gender differences in the network, causing interaction. The other life processes can have an effect on the state of network at the old age and be piled up as a negative state. It can be understood that an old person who suffers from social isolation is the final outcome reflected in the old age since the network prior to the old age have accumulated as a form of disadvantage according to the accumulative profit disadvantage theory, so it can serve as a theoretical ground especially in that economic troubles coming from the low social and economic level can influence the social isolation of the elderly.

Finally, the social control theory, the last one of theories on social isolation at the old age, sheds light on the relationship between social isolation and health. The conclusion that the health of old people who are socially isolated is not so good as those who not shows that the health of old people can continuously get better when they are controlled by family members or people around them. Therefore, this theory has a hypothesis that socially isolated old people are afflicted with failing health since they have nobody to take control of their individual behaviors (Cacioppo et al., 2006). While this theory illustrates the social isolation of the elderly who live by themselves and their poor health, it displays some shortfalls in seeking to explain why some old people, who lead physically a lonely life, enjoy a healthy social relationship.

The issue of the social isolation of the elderly

The explanation and definition as to the conception and characteristics of social isolation vary, depending on who a researcher is. Social isolation is classified as physical isolation (Waite and Hughess, 1999), exchange isolation with unofficial systems (Cornwell and Waite, 2009; Hawthorne, 2008), social participation isolation (Benjamins, 2004), through which it understood the social isolation of the elderly from the various aspects. Social isolation is defined as the cut-off from the society and studied the
relationship between social isolation and suicidal impulse while focusing on the emotional severance developed by Vincenzi and Grabosky (1987).

Studies on the social isolation of the elderly start with interests in the mutual relationship and interaction between human beings and circumstances. That old people are socially isolated means that the microsystem surrounding them has become hollow. That is why the society should take more care of them in that not only are they exposed to dangers and stresses, but the social support for them is weak which serves as a buffer zone at a time when they fall in trouble. And it can be concluded that those who are socially isolated are less equipped with resources that they can mobilize than those who are not. The reason is that the destitute of internal and external resources is not limited to economic poverty but is linked to that of psychological social resources, which is the cause of social isolation speeding up. Moreover, the social isolation of the elderly gets more problematic when we see it in the context of South Korea’s familism. As the members of the South Korean society stick to the belief that the elderly must be supported by their family, old people without family or insufficient informal systems make themselves isolated, a grave problem for the South Korean people.

On the other hand, an extreme social isolation is a case where a person doesn’t come in contact with others within his or her social network or is engaged in poor interaction with them. Such an extreme case may arise from the lack of social networks (Laveist et al., 1997). In other cases, the elderly undergo social isolation as they are retired from their job or lose their family members including their spouse. Studies on the degree to which old people are socially isolated show that the rate of social isolation stands at 25% to 35%, while that of extreme social isolation at 4.3% (Laveist et al., 1997) to 4.8% (Hawthorne, 2008).

On the whole, the elderly who are socially isolated is difficult to find mainly because they don’t make use of the social welfare services and stay in a blind spot. What is worse, as they refuse to rely on, in many cases, the social welfare services for them, it is likely that they are permanently isolated or die by themselves, a social illness in South Korea.

THE ASPECTS OF THE ELDERLY’S SOCIAL ISOLATION ARISING FROM THE CHANGES OF THE SOUTH KOREAN SOCIETY

The changes of family relationship and the social isolation

The elderly in a traditional family in old days took full responsi-
sibility for succeeding to and handing down the traditional culture as a final decision maker due to their long life experience, knowledge, and wisdom, and played a leading role in educating their offspring and guiding where their children should go, so they could feel greatly happy with their family life and their own entire life. In other words, the elderly who were a family head played a role as the top leader of their family and the representa-
tive towards the outside, an emotional mentor for all the family members, a symbol and ‘senior member’ of their family, and a be-
ing who were respected by the whole family. Moreover, they as ‘a person in charge of domestic education’ were fully responsible for the education, the socialization, and the social adjustment of their children as well as punishing and admonishing their family members when they committed an error, and among other things, they played a role as a manager who took charge of their family affairs and domestic economy.

However, the change in the modern society which has had the biggest impact on the role of the elderly in a family is the advent of a nuclear family. As young people flocked to urban areas out of their hometown as a result of urbanization and industrialization and the family-oriented agricultural industry structure fell apart, the family system has by degrees turned into a nuclear family whose center is a husband and wife. Consequently, this drastic change forced the role as a final decision maker in a family to move to a young couple from the elderly, which made the elderly ‘those who were supported by family members.’ With social changes speeding up and modern science making progress, the elderly have degenerated into ‘a straggler in the age from a source of wisdom’ and a poor figure who was merely immersed in old traditions and shabby knowledge. In addition, as the function of education, a vital function in a family, has in large part moved to formal education institutions like school, the role of the elderly as an educator in charge has sharply reduced, turning old people into ‘a bystander from a person responsible for domestic education’. They have also changed into ‘a person who is dependent from a pivotal person in the family economy’ as the center of economic power has moved to young people whose productivity is excellent.

The change of the social structure and the social isolation

The role of the elderly in the traditional local communities and the whole society in the past was tremendously significant. In particular, the elderly in a local community largely composed of relatives and clans played a role as a senior of their clans and moral leader, and at the same time as a social educator. First of all, they acted as both a representative and leader for the local community.
They were in charge of making decisions as to all the matters, large and small, and carrying out unofficial administrative works, whether they were significant or not, as a leader and representative. In addition, they were engaged in handing down the knowledge and wisdom which they had garnered from their experience in their long life to the rising generation as ‘a social educator.’ The elderly at that time were deeply respected by all the villagers as they, ‘a senior in the local community’ served as an outstanding counsellor, problem-resolving figure, and advisor. People looked up to the elderly in the whole society, and they played literally an essential role since their social position was firm. It may be said that the high position that the elderly enjoyed originated from Confucian ideas that filial piety was seen as a basis for all the conducts and virtue and the characteristics of the Confucianism society in which repeated experience was seen as valuable.

But as the social system has fallen into pieces due to urbanization and industrialization and people have moved to a nearby area close to their workplace, the power of the elderly to make decisions and take control in the local community have been inevitably weakened, turning senior citizens into ‘a person dependent on others from a representative of the local community.’ What is more, as the modern administrative system has made progress and professional administrative officials have emerged, the elderly have been deprived of their former role as a center of the local administration, which degenerated old people into ‘a mere looker-on or bystander from a leader of the local community’.

The change of the economic structure and the social isolation

As industrialization and progress in modern production technology have driven the elderly who fell behind young people in productivity and modern technology out of production sites as if they deserved it, they came to be a person who relied on others in the society because they lost economic power. The position of the elderly in the past as a center and representative of the society and economy has been stripped in the process of industrialization, and now they live as a marginal or subjected man. Namely, they have fallen down to a marginal man from the center of economy. For example, the age at which an employee received the highest salary was 55 until 1987, but it moved down to the early 50s in 1988 and to the early 40s in 1989. As we mentioned earlier, the factor which had the most enormous effect on the change of the social status for the elderly was the introduction of a forced retirement when they got to the retirement age, and retirement as a typical phenomenon in the 21st century is said to be the biggest factor to transform the economic structure of senior citizens.

It can be said that economic poverty at a golden age coming directly from retirement further accelerates social isolation for old people as poor social relationship does. Economic difficulties which senior citizens cannot head off worsen their psychological health and well-being in a influential way and are linked to the low level of satisfaction with their life. Arendt (2005), who worked on if economic resources were related to the non-economic life state of the elderly, reported that economic resources have an effect on living conditions, physical activities, social solidarity activities, social touch, functional ability, a sense of loneliness, and psychological well-being. The outcome can be said to be an explanation to the question of how much economic poverty has an influence as an accelerating element bringing about the social isolation of the elderly.

The change of the culture and the social isolation

An increase in the old population as the aging society arrives and the consequent isolation issue means that we have been driven to a situation where the provision of cultural welfare service for the elderly cannot be neglected any longer simply because it is unproductive and inefficient. If welfare means that a human being can enjoy a life suitable to him or her, the satisfaction with economic and material desire can be a necessary condition, not a sufficient condition.

The right for culture is a position to view an individual’s cultural life as a social basic right. As a result, both the society and the state must create all the circumstances so that such a right can be fulfilled. The constitution of South Korea contains the provision of evidence as a principle for a culture state through the Preamble to the Constitution, article 11 which defines the right for equality, article 9 which is called a cultural clause, article 69 which defines the nation’s duty to promote traditional and national culture in what the new president should do in the inaugural ceremony. What is more, the constitution which defines the cultural basic rights in many articles, stipulates the fundamental idea of the right for culture by article 10 which defines the dignity and value of human beings and the right to pursue happiness.

THE SOCIAL ISOLATION AND SOCIAL ACTIVITY OF THE ELDERLY

The problems of the elderly due to social isolation

Of six million senior citizens over 65 in South Korea, the number of old people who live alone is 1.19 million, around a 2.2
times increase compared with a decade ago (the National Statistics Office, 2012). The social isolation for the elderly is a grave risk factor which can lead to a seclude life style, suicide, failing health, and lonely death (Berkman, 1995; Cacioppo and Hawkley, 2003; Cacioppo et al., 2006).

Those who are socially isolated are exposed to various dangers potentially leading to negative health conditions, and the issue of social isolation brings about malnutrition, repeated hospitalization, cognitive regression, and grave alcoholic problems (Cacioppo and Hawkley, 2009). Moreover, considering that the previous studies (LaVeist et al., 1997) which found that the quality of life and the satisfaction level of life at the old age are related to how much the elderly are socially connected, the issue of social isolation for the elderly does matter.

Dramatic changes and social and economic decoders in the South Korean society in recent years can be viewed as the main cause of anomic suicide. From the viewpoint of the exchange theory, as the elderly have been incrementally deprived of resources like economic power and health that they had once enjoyed, leading them to form the relationship reliant on others, their social cohesion is weakened because old people are more and more likely to intend to reduce the dependence and burden on others by willingly avoiding interaction with old people themselves or others. The weakening of social integration drives the elderly to a lonely condition under which they are afflicted with social and psychological troubles and, in a worse case, some old people decide to take away their own life. Namely, the loneliness and social isolation tormenting the elderly could result in committing suicide.

The change trend of the elderly issues related to social isolation

Until now, this research has spoken of the issues arising from the social isolation of the elderly in South Korea at a social activity level. As previous studies confirmed, the troubles which can happen to the elderly as a result of social isolation are suicide, depression, alienation, crime, erratic behavior, dementia, and alcoholic addition, which are negative aspects likely causing social problematic actions. A careful examination into the change trends of those abnormal conducts by the elderly make us realize that they are wholly proceed at a more rapid rate than the aging process is.

If we explore the change trend of each problematic behavior from the year of 2000 when South Korea stepped into the aging society, suicide rates, above all, have risen by about 230% for a decade to 80.3 persons per 100,000 people in 2010 from 34.2 persons per 100,000 people in 2000 as shown in Fig. 1.

As the number of the elderly who committed suicide and their suicide and death rates have been continuously on the rise, the number of the elderly who committed suicide in 2008 was as many as 3,561 and the suicide and death rates per 100,000 old people was 71.7, an even higher figure compared with 26.0 among the general population as shown in Table 1.

On the other hand, cause analysis of a sharp rise in crimes by the old population and the measures against them found that the crime rate of the elderly had surged by around 250% to 5.9% (126,508 crimes) out of the total 2,519,237 crimes in 2009 from 2.5% (54,371 crimes) out of the total 2,241,635 crimes in 2000, and in terms of the crime motive, animosity and anger which accounted for 43.1% of the total came first as shown in Fig. 2. The statistics can be in part interpreted as a sort of reaction by the el-

Table 1. The trend of the suicide and death rate of the elderly (unit: person)

| Year | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| The suicide and death rate of the elderly per 100,000 people | 34.29 | 40.61 | 53.63 | 69.55 | 76.55 | 77.89 | 69.82 | 73.61 | 71.71 |
| The number of old people who commit suicide | 1,164 | 1,463 | 2,023 | 2,760 | 3,189 | 3,401 | 3,202 | 3,541 | 3,561 |

Source: the Ministry of Health and Welfare (2010). Health and Welfare Businesses for the Elderly Information.
In case of dementia, although the number of dementia patients was below about 30 per 10,000 people in 2000, the number rose to around 450,000 in 2010 and it is expected to be around 70 in 2020 as shown in Fig. 3. This increase represents an increase by 50% every five year, which accounts for the largest share of medical expense for the elderly.

The number of depression patients has continuously risen by 170% for the past five years, according to the statistics of old depression patients (2011. 03.11). The total number of old depression patients has gone up to 147,721 in 2009 from 89,040 in 2004. If we calculate the number of depression patients over 65 per 100,000 old people, it has swelled to 25,979 in 2009 from 18,818 in 2004 (Fig. 4).

Medical costs for those over 65 in health insurance have continued to rise in the wake of aging. The amount of medical costs, which hovered around an estimated two trillion won in 1999, rose to around five trillion won in 2004, around 10 trillion won in 2008, and around 12 trillion won in 2009 as shown in Table 2. On the other hand, it is self-evident that the social condition that the number of aging people is larger than that of young people who are more productive will turn out to be an growing number of risk factors in every aspect including the politics, society and economy in the future. Therefore, this trend can bring about other problems in maintaining the future society and developing the

### Table 2. Medical costs for the elderly over 65 in health insurance

| Year | Total medical costs | Medical costs for the elderly over 65 | The percentage of medical costs for the elderly to the total medical costs |
|------|---------------------|--------------------------------------|---------------------------------------------------------------------|
|      | Total               | The age of 65-69                      | The age of 70-74 | Over 75 | Total |
| 1999 | 113,797             | 19,332 (100.0) | 7,869 (40.7) | 5,705 (29.5) | 5,768 (29.8) | 17.0 |
| 2004 | 223,559             | 51,697 (100.0) | 20,472 (40.1) | 14,819 (29.0) | 15,806 (30.9) | 22.9 |
| 2008 | 350,366             | 104,904 (100.0) | 36,504 (34.8) | 30,733 (29.3) | 37,667 (35.9) | 29.9 |
| 2009 | 394,296             | 120,391 (100.0) | 39,871 (33.1) | 35,552 (29.5) | 44,968 (37.4) | 30.5 |

The rate of increase and decrease (2009/2008)

- Total: 12.5%
- The age of 65-69: 14.8%
- The age of 70-74: 9.2%
- Over 75: 15.7%
- Total: 19.4%
- The rate of increase and decrease: 0.6%

Source: Health Insurance Review & Assessment Service, medical cost statistics index for each year.

**Fig. 2.** The situations of old criminals 2000-2009. Source: The Korean Institute of Criminology Crimes and Criminal Justice Statistics.

**Fig. 3.** An increase trend of dementia patients. Source: The Ministry of Health and Welfare.

**Fig. 4.** The number of old depression patients. Source: The Ministry of Health and Welfare (2010). Health and Welfare Businesses for the Elderly Information (unit: 100,000 person).
human history unless we come up with a variety of policy alternatives for the elderly and implement them.

**The prediction factors of the social isolation of the elderly**

Factors to predict the social isolation of the elderly include health state, depression, cognitive function, and family function, and such a social isolation undermines life contentment and happy elements in terms of the quality of life, increases the urge for and the consideration of suicide. As a result, social isolation serves as a culprit to bring about suicide, depression, criminal behavior, and dementia, so we are urged to analyze the prediction factors of social isolation in an effort to prevent the dismal phenomenon.

Accordingly, this research intends to present personal factors and regional factors as the prediction factors for the social isolation of the elderly. To begin with, personal factors are divided into health-related variables and residing characteristics, which comes from the outcome of the research by Nicholson (2009). And they are also classified as physical health variables and mental health variable, which shows that the more chronic diseases a senior citizen suffers from and the more seriously a senior citizen perceives his or her ailments, the more likely the senior citizen will be to be socially isolated in the future. On the other hand, another factor to predict social isolation is the characteristics of dwelling. It was found that if old people live in their own house, they are less likely to be socially isolated due to the stability of their residence. It was also reported that their social isolation can take different shapes, depending on whether they live in an apartment or a detached house.

What is more, the characteristics of the local community where old people live and its neighborhood can have an effect on the quality of life and health of the elderly (Lang et al., 2009). Kubiszynsky et al. (2005) studied the effects on the depression of the elderly by figuring out the age structure (the rate of those over 65) in the context of a local community, the disadvantages of neighboring surroundings (the rate of poverty), the dwelling stability, and social and economic profits as the characteristics of neighboring surroundings. In addition, if the welfare facilities for the elderly are adequately operated within a local community, they can act as a space where senior citizens have more opportunities for social exchanges and can develop into a resource to work out their problems, which means that the local community is equipped with a social system to protect old people. As a result, we may conclude that the demographic and social characteristics, the conditions to bolster up social exchanges, and infrastructural facilities as factors to foretell the social isolation of the elderly are truly important.

**CONCLUSIONS**

The social isolation of the elderly in South Korea may not be resolved by an old person's efforts. For one thing, it is crucial that the government should come up with policies to resolve the serious problem at a level of welfare for the elderly. In addition, the government should provide the conditions and service contents to accept what the elderly call for as an individual attempt to prevent and resolve their social isolation.

As this research mentioned earlier, depression, suicide, dementia, health problems, crime, and digression of the elderly considered as a serious social trouble can be said to be the direct result of their social isolation in the end. Therefore, practical efforts to find a solution to this matter should be accompanies by the social conditions and contents to resolve their health problems at a physical, psychological, mental, and social level. And it is truly vital that a variety of businesses should be provided to make brisk the exchange among generations as an answer for the social isolation of the elderly, along with many kinds of public projects for their health pushed ahead with by the nation and public corporations.

Accordingly, as a role and challenges of the field of rehabilitation exercise aimed at resolving social isolation, a host of programs should be vitalized such as the development and provision of various relationship-building programs, the expansion and deepening of the existing psychological health programs, the continuous diversification of programs at a public interests level, and the development of rehabilitation exercise, voluntary service, creation of new jobs for them, and programs for social participation designed to boost the social activity of the elderly.

**CONFLICT OF INTEREST**

No potential conflict of interest relevant to this article was reported.

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**REFERENCES**

Arendt JN. Income and “outcomes” for elderly: do the poor have a poorer life? Soc Indic Res 2005;70:327-347.
Benjamin MR. Religion and functional health among the elderly: is there a relationship and is it constant? J Aging Health 2004;16(3):355-374.
Berkman LF. The role of social relations in health promotion. Psychosom Med 1995;57(3):245-254.
Cacioppo JT, Hawkley LC. Perceived social isolation and cognition. Trends Cogn Sci 2009;13(10):447-454.
Cacioppo JT, Hawkley LC. Social isolation and health, with an emphasis on underlying mechanisms. Perspect Biol Med 2003;46(3 Suppl):S39-S52.
Cacioppo JT, Hughes ME, Waite LJ, Hawkley LC, Thisted RA. Loneliness as a specific risk factor for depressive symptoms: cross-sectional and longitudinal analyses. Psychol Aging 2006;21(1):140-151.
Cornwell EY, Waite LJ. Social disconnection, perceives isolation, and health among older adults. J Health Soc Behav 2009;50(1):31-48.
Hawthorne G. Perceived social isolation in a community sample: its prevalence and correlates with aspects of peoples’ lives. Soc Psychiatry Psychiatr Epidemiol 2008;43:140-150.
Kubzqnsky LD, Subramanian SV, Kswachi I, Fay ME, Soobader MJ. Neighborhood contextual influences on depressive symptoms in the elderly. Amer J Epidemiol 2005;162(3):253-260.
Lang IA, Hubbard RE, Andrew MK, Llewellyn DJ, Melzer D, Rockwood KR. Neighborhood deprivation, individual socioeconomic status, and frailty in older adults. J Am Geriatr Soc 2009;57(10):1776-1780.
LaVeist TA, Sellers RM, Brown KA, Nickerson KJ. Extreme social isolation, use of community based senior support services, and mortality among African American elderly women. Am J Community Psychol 1997;25(5):721-732.
Nicholson NR Jr. Social isolation in older adults: an evolutionary concept analysis. J Adv Nurs 2009;65(6):1342-1352.
Vincenzi H, Gravosky F. Measuring and emotional/social aspects of loneliness and isolation. J Soc Behav Pers 1987;2(2):257-270.
Waite LJ, Hughtess ME. At risk on the cups of old age: living arrangements and functional status among black, white, and Hispanic adults. J Gerontol B Psychol Sci Soc Sci 1999;54(3):S136-144.