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# A Study on Influence of Physical Preparation for Later Life on Social Relationship after Retirement: Focusing on Moderating Effect of Leisure Life

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## Abstract

**Purpose** - This study is to verify the mediating effect of voluntariness in retirement and the moderating effects of leisure life to examine which parts of later life preparations have influence on the retired life.

**Research design, data, and methodology** - In this study, the 6<sup>th</sup> Korean Retirement and Income Study was conducted on 5,254 members of households with householders over the age of 50. To examine the relationship between later life preparation and retired life, this study used personal data based on the serial number of the household members.

**Results** - First, physical preparation for later life had a positive influence on retired life satisfaction among retirement satisfaction. People showed higher retired life satisfaction. Secondly, physical preparation for later life had a positive influence on satisfaction over relationship after retirement among retirement satisfaction. People showed higher satisfaction over relationship after retirement when they were more physically prepared for later life.

**Conclusions** - In particular, leisure life had a mediating effect for the influence of physical preparation for later life on the retired life. Also, leisure life and physical preparation for later life showed a close influencing relationship. People showed active leisure life and higher retired life satisfaction when they were more physically prepared for later life.

**Keywords:** Instrumental Physical Preparation for Later Life, Daily Physical Preparation for Later Life, Satisfaction on Retired Life, Satisfaction on Relationship after Retirement.

**JEL Classifications:** E21, J14, K32.

## 1. Introduction

In South Korea, aging is proceeding in unprecedentedly fast speed compared to any other cases around the world. Due to rapid aging, our society is encountering various issues related to elderly. As more old population need to be supported by the working age population, this resulted in higher social cost and increased sense of burden on supporting old population(Hovey & Magana, 2002). Age-dependency ratio refers to the number of population over 65 supported by the working age population from 15 to 64. The age-dependency ratio was 10.1 in 2000 and 17.9 in 2015 and the ratio is expected to reach 38.6 in 2030 and 71.0 in 2050. This shows the seriousness of aging in South

Korea (Statistics Korea, 2016).

Also, GDP to spend on public social welfare is relative low in South Korea compared to other OECD member countries. However, the social welfare for rapid aging constantly increased from 2000s and expected to increase continuously. As a result, the financial condition is expected to aggravate rapidly in the future. In addition, Bank of Korea (2017) warned that South Korea may encounter a situation where economy cannot grow further after mid 2030s considering the influence of aging population(Kontis, Bennett, Mathers, Foreman, & Ezzati, 2017).

In response, this study seeks to analyze how physical preparation for later life among later life preparation directly influences on later life. As the life cycle is getting longer, more people have higher awareness on health after retirement. In response, this study aims to analyze detailed factors influencing on retired life(Kim & Choi, 2017).

Through researches on the influence of physical preparation for later life on retired life, this study plans to focus on creating the environment for getting prepared for

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later life. The purpose of this study is to identify later life preparation factors influencing on the retired life and key factors influencing on the retired life.

This study seeks to examine the physical preparation for later life influencing on retired life for successful later life, identify types of later life preparations with significant influence, and suggest how to live a successful later life after retirement. Furthermore, this study aims to examine whether leisure life has a positive influence on retired life.

## 2. Theoretical Backgrounds

### 2.1. Physical Preparation for Later Life

In preventing the various geriatric diseases in the old age and predicting the life in old age for a healthy life, physical preparation for later life is very important and it serves as the basics for later life preparation in the middle age. Physical health issue may matter the most in the later life and health is the essential condition for maintaining physical independence, leading one's daily life, and seeking and accomplishing life goals. Poor health in the old age results various negative influences on various life aspects of old age such as psychological withdrawal, reduce in scope of social activity, feeling of loneliness, and feeling of helplessness. Thus, physical preparation for later life is an essential element in continuing independent and energetic later life (Kim & Lee, 2017; Nishimura & Oikawa, 2017).

Thus, this study seeks to focus on the abilities applicable healthy daily life rather than a concept of diseases in old age.

### 2.2. Relationship between Physical Preparation for Later Life and Satisfaction in Retired Life

While health is significant in the old age after retirement, health conditions of elderly in South Korea are poor. Physical health influences on life satisfaction, fulfillment of social role, interaction with others, sense of belonging in family and community, and spending leisure time. Also, good health condition results in less financial burden. Thus, physical health in the old age is the most important element as the driving force for later life (Carret, Lafont, Letenneur, Dartigues, Mayo, & Fabrigoule, 2003).

One is unable to work after losing health and this leads to aggravated financial problems. Loss of health reduces scope of social activities resulting in issues such as loneliness, feeling of helplessness, and isolation while involving mental aging leading to degradation of various psychological functions. In other words, loss of health is important as it has a crucial influence on overall later life (Mielke, Vemuri, & Rocca, 2014).

In response, elderly are also aware of importance of health. In the survey on later life, the highest number of

elderly (81.7%) answered health is the most important in later life. Korea Research Institute for Elderly pointed out that physical health issue (67.2%) matters the most in the later life and 52.8% of subjects answered that medical benefits shall be implemented the first among welfare system for elderly.

Health is a personal resource most important in elderly compared to any other age group and it is a key element influencing on the life satisfaction after retirement. According to previous researches, health condition acts as the most important factor in the quality of stable life (Newson & Kemps, 2005).

Health elderly are more satisfied in their life and participate in social activities more actively compared to less healthy elderly. Thus, health condition is the significant variable that influences on the degree of life satisfaction (Mazzonna & Peracchi, 2012).

Domestic research results also showed that the health in old age has a positive influence on the quality of life. According to domestic researches, health influences the most on the degree of life satisfaction. This study seeks to differentiate from other researches by focusing on the research based on such perspective (Nishimura & Oikawa, 2017).

### 2.3. Life Satisfaction after Retirement

#### 2.3.1. Relationship between Later Life Satisfaction and Life Satisfaction after Retirement

As elderly retire from their work, they go through various social, economic, and physical changes. When they have less self-esteem and overall life satisfaction due to decrease in income and loss of social role after retirement, it might lead to problems in physical and psychological health (Parsons, 1991).

Preceding researches pointed out that one needs to predict and prepare in advance as he or she encounters health, income, loneliness, and retirement issues during the retirement period while facing other issues such as preparation for later life, time usage, financial problem, and interaction with married child.

When this study reviewed the preceding researches, it was hard to find researches about the direct relationship between life satisfaction and later life preparation for each field by the retiree in middle-old age. On the other hand, preceding researches commonly suggested that variables related to retirement and later life preparation influence on the life satisfaction of retiree in middle-old age (Roberts, Rice, & Jones, 2010).

Thus, this study assumed that the retiree's later life preparation is closely related to life satisfaction after retirement. Based on the preceding researches, this study seeks to how various socio-demographic variables, later life preparation variables, and retired elderly's preparation for

later life influence on the life satisfaction after retirement (Parsons, 1991).

### 2.3.2. Relationship between Later Life Preparation and Satisfaction on Interpersonal Relationship

After retirement, elderly go through various social, financial, and physical changes. Less income and loss of social role caused by retirement leads to less self-esteem and general life satisfaction. This may cause problems in physical and psychological health (Sandhu & Asrabadi, 1994).

one needs to predict and prepare in advance as he or she encounters health, income, loneliness, and retirement issues during the retirement period while facing other issues such as preparation for later life, time usage, financial problem, and interaction with married child (Seok, 2011).

## 2.4. Leisure Life

Leisure life in old age is often referred to as a matter of good use of spare time and it is a crucial part directly related to life satisfaction and quality of life. Leisure activities by elderly are as important as medical security and income security for following reasons (Banks & Oldfield, 2007).

First, elderly are the part of the country and society like the young generation and they hold the rights to live confidently and seek infinite growth. As the principles of the welfare for the aged help elderly to fulfill their role as the member of the society and fulfill the desire to improve oneself, elderly hold the rights to enjoy the leisure activities and seek desires to grow and develop like the young generation. Thus, the most fundamental stage in the welfare for the aged is securing the leisure activities for the elderly (Atchley, 1982).

Secondly, 'Feeling of Loneliness and Isolation' is one of the problems found in the modern industrialization society and these feelings directly influence on depression and will to live. Thus, leisure activities are directly related to survival of elderly as they solve such feeling of loneliness and isolation.

Third, chronic degenerative diseases such as mental illness, dementia, stroke, hypertension, and joint problems in old age are prevented and managed by participating in leisure activities (Bianchini & Borella, 2016).

## 3. Research and Analysis

### 3.1. Research Model and Research Hypothesis

#### 3.1.1. Research Model

To examine the influence of physical preparation later life on retired life, this study seeks to verify the moderating effect of leisure life among social participation activities. This study analyzed the control variable with socio-demographic characteristics. The research model for this study is as [Figure 1].

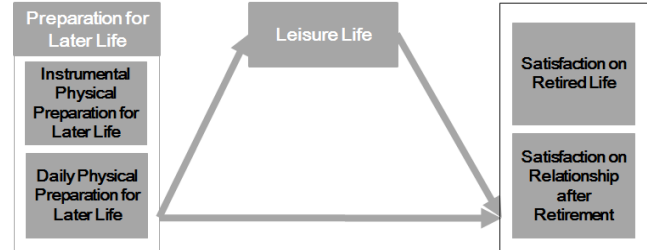


Figure 1: Research Model

#### 3.1.2. Research Hypothesis

The purpose of this study is to verify the mediating effect of voluntariness in retirement and moderating effect of leisure life to examine what parts of later life preparation influence on the retired life. For the research, this study set following hypotheses with variables selected based on the preceding researches.

The hypotheses for this study are as follows.

- H1:** Physical preparation for later life will have a positive influence on psychological changes after retirement.
- H2:** Physical preparation for later life will have a positive influence on life satisfaction after retirement.
- H3:** Leisure life will appear as a mediating effect for physical preparation for later life's positive influence on psychological changes after retirement.
- H4:** Leisure life will appear as a mediating effect for physical preparation for later life's positive influence on the life satisfaction after retirement.

### 3.2. Research Subject and Data Collection

In this study, 6th Korean Retirement and Income Study was conducted on 5,254 members of household with householder over 50. To examine the relationship between later life preparation and retired life, this study used personal data based on the serial number of the household members.

### 3.3. Operational Definition of Variable and Measuring Tool

#### 3.3.1. Independent Variable – Physical Preparation for Later Life

Physical preparation for later life refers to getting regular checkup for preventing senile chronic diseases such as hypertension and diabetes, eating healthy meal for maintaining health, and doing regular exercise.

6th Korean Retirement and Income Study is composed of 17 items about physical preparation of later life and it measures by classifying the 17 items into two, daily living activity and instrumental daily living activity.

There are 7 items for measuring daily living activity and detailed survey questions are as follows. (1) Dressing, (2) Washing a face, (3) Taking a bath, (4) Having a meal, (5)

Moving, (6) Using a restroom, (7) Controlling urine and feces. The answer to each question is composed of 3-point Likert Scale with 'Able to do it alone', 'Needs help partially', and 'Unable to do it alone'.

There are 7 items for measuring instrumental daily living activity and detailed survey questions are as follows. (1) Using Transportation, (2) Buying Stuffs (Shopping), (3) Doing Laundry, (4) Going Out for Nearby Place, (5) Preparing A Meal, (6) Doing housework, (7) Managing Money. The answer to each question is composed of 3-point Likert Scale with 'Able to do it alone', 'Needs help partially', and 'Unable to do it alone'(Bonsang, Adam & Perelman, 2012).

### 3.3.2. Dependent Variable – Satisfaction in Relationship after Retirement

Korean Retirement and Income Study used in this study divides into part about various aspects of life and part about relationship with others to measure the life satisfaction of the subjects. The items are composed of 12 questions as follows. (1) Residence, (2) Relationship with neighbor, (3) Economic status, (4) Occupation, (5) Relationship with friend, (6) Relationship with family, (7) Married life, (8) Health, (9) Life in general, (10) Relationship with child, (11) Relationship with brother and sister, (12) Leisure life. Each question is composed of 5-point Likert Scale with 'Very unsatisfied', 'Unsatisfied', 'Neutral', 'Satisfied', and 'Very satisfied'.

As this study targeted on the elderly without intention for seeking job and continuing economic activity in accordance with Korean Retirement and Income Study's operational definition on retirement, this study seeks to measure the main factors for life satisfaction in 11 remaining questions other than 'job' by classifying into satisfaction on retired life and satisfaction on relationship after retirement(Barry, 2001).

### 3.3.3. Parameter – Leisure Life

This study measured the average leisure activity time on

weekdays to measure the leisure life of retirees. In response, this study plans to measure by classifying the values for 'How did you spend your leisure time during the last week? Please answer the total leisure time you spend'(Celidoni, Bianco, & Weber, 2017)

## 4. Analysis Results

### 4.1. Socio-Demographic Characteristics of Subjects

Korean Retirement and Income Study (KReIS) After classifying and selecting the subjects meeting the conditions required for analysis in the 6th Korean Retirement and Income Study(KReIS)data(2015, this study selected total of 3,312 samples as the final analysis sample.

First, this study classified into 3 factors. For classification standard, this study classified into a demographic factor, family-related factor, and finance-related factor. The demographic factor has been classified into gender, age, and academic background while family-related factor has been classified into spouse, child, and grandchild. Also, finance-related factor has been classified into residential area, liabilities, and awareness on subjective economic independence.

### 4.2. Analysis on Exploratory Factors of Physical Preparation for Later Life

The results for exploratory factor analysis on questions about physical preparation for later life are indicated in <Table 1>. The eigen value for factor analysis result showed the instrumental physical preparation for later life of 6.722, daily physical preparation for later life of 6.449, and variance of 77.475%. KMO(goodness-of-fit of sample) value was .952 indicating that correct variable for factor analysis was selected and that validity of measuring tool was verified. In the Barlett's Test indicating the goodness-of-fit of the model, the significance probability was  $p < .001$  showing statistical

**Table 1:** Exploratory Factor Analysis on Physical Preparation for Later Life

Variable	Instrumental Physical Preparation for Later Life	Daily Physical Preparation for Later Life	Cronbach's $\alpha$
Instrumental Daily Living Activity - Using Transportation	.880	.272	.961
Instrumental Daily Living Activity - Buying Stuffs (Shopping)	.874	.279	
Instrumental Daily Living Activity - Doing Laundry	.869	.251	
Instrumental Daily Living Activity - Going Out for Nearby Place	.858	.312	
Instrumental Daily Living Activity - Preparing A Meal	.851	.296	
Instrumental Daily Living Activity - Doing housework	.846	.333	
Instrumental Daily Living Activity - Managing Money	.739	.378	
Daily Living Activity - Washing A Face	.240	.885	.933
Daily Living Activity - Controlling Urine and Feces	.210	.885	
Daily Living Activity - Using A Restroom	.288	.863	
Daily Living Activity - Dressing	.316	.842	
Daily Living Activity - Having A Meal	.261	.813	
Daily Living Activity - Taking A Bath	.597	.618	
Eigen values	6.722	6.449	
Total variance	39.542	77.475	

KMO=.952 Bartlett's test= 68605.404, df = 136,  $p < .001$

significance. This study also reviewed Cronbach's  $\alpha$  coefficient to verify the internal consistency and the figure for instrumental physical preparation for later life was .961 and figure for daily physical preparation for later life was .933.

4.3. Hierarchical Regression Analysis

Following <Table 2> is the hierarchical regression model between variables influencing on the satisfaction on relationship after retirement among retirement satisfaction.

Model 1 carried out regression on daily physical preparation for later life and instrumental physical preparation for later life, two sub-variables of physical preparation for later life. Model 1's  $R^2$  was relatively high with 24.7%. Also, daily physical preparation for later life ( $t=2.853$ ,  $p=.004$ ) among physical preparation for later life was significant in

the significance level of 0.01 and it had a positive influence on the satisfaction over relationship after retirement. Model 2 is the result for additional regression analysis on Model 1's parameter, leisure life. Model 2 explains the variance of 27.2%. In addition, daily physical preparation for later life ( $t=2.621$ ,  $p=.009$ ) influenced on the satisfaction over relationship after retirement.

4.4. Mediator Regression Analysis and Sobel Test

Following <Table 3> is the analysis on whether the leisure life has a mediating effect on later life preparation on retirement satisfaction among the sub-variables of retired life. For later life preparation, this study analyzed economic preparation for later life and physical preparation for later life.

**Table 2:** Hierarchical Regression Analysis on Satisfaction over Relationship in Retired Life

Variable		nonstandardization factor		Standardization factor	t	P-value	communistic statistics		R <sup>2</sup>	F
		B	standard error	Beta			allowance	VIF		
Model1	(Constant)	1.462	.357		4.096	.000			.141	23.085
	Daily Physical Preparation for Later Life	1.007	.353	.161	2.853	.004	.111	8.977		
	Instrumental Physical Preparation for Later Life	-.381	.333	-.065	-1.145	.252	.111	8.977		
Model2	(Constant)	1.195	.355		3.367	.001			.170	29.149
	Daily Physical Preparation for Later Life	.912	.348	.146	2.621	.009	.111	8.988		
	Instrumental Physical Preparation for Later Life	-.308	.328	-.052	-.940	.347	.111	8.985		
	Leisure Life	-.004	.015	-.005	-.283	.777	.992	1.008		

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

a. Dependent Variable: Satisfaction on Relationship after Retirement

**Table 3:** Parameter Analysis on Leisure Life for Retired Life Satisfaction

Independence → Mediation → Dependent variable	parametric effectiveness verification	beta value	Standard deviation	t-value	p-value	R <sup>2</sup>
Daily Physical Preparation for Later Life → Leisure Life → Satisfaction on Retired Life	step1(Independence→Mediation)	.288	.075	3.852	.000	.067
	step2(Independence→Dependent)	.454	.097	4.657	.000	.084
	step3(Independence variable)	.450	.097	4.628	.000	.095
	step3(Mediation variable)	.031	.013	2.473	.013	.095
Instrumental Physical Preparation for Later Life → Leisure Life → Satisfaction on Retired Life	step1(Independence→Mediation)	.249	.046	5.417	.000	.094
	step2(Independence→Dependent)	.540	.082	6.553	.000	.124
	step3(Independence variable)	.541	.082	6.573	.000	.128
	step3(Mediation variable)	.030	.013	1.738	.032	.128
Daily Physical Preparation for Later Life → Leisure Life → Satisfaction on Relationship after Retirement	step1(Independence→Mediation)	.388	.025	3.852	.000	.067
	step2(Independence→Dependent)	.502	.058	4.624	.000	.084
	step3(Independence variable)	.499	.058	4.605	.000	.088
	step3(Mediation variable)	.031	.014	1.461	.044	.088
Instrumental Physical Preparation for Later Life → Leisure Life → Satisfaction on Relationship after Retirement	step1(Independence→Mediation)	.249	.046	5.417	.000	.094
	step2(Independence→Dependent)	.517	.094	5.507	.000	.104
	step3(Independence variable)	.518	.094	5.516	.000	.106
	step3(Mediation variable)	.034	.015	1.918	.049	.106

This study conducted a regression analysis on above intermediary relationship and in the analysis on leisure life's mediating effect on the influence of later life preparation on the retirement satisfaction, the mediating effect was significant in all parts except investment propensity index.

<Table 4> showed that leisure life holds mediating effect when Sobel test statistic (Z value) is above 1.96 or below -1.96. Also, two-tailed probability (P value) was significant in 0.05~0.000.

**Table 4:** Sobel Test on Leisure Life Parameter

Independence → Mediation → Dependent variable	Sobel test statistic (z-value)	Two-tailed probability (P-value)
Daily Physical Preparation for Later Life → Leisure Life → Satisfaction on Retired Life	2.026	.043
Instrumental Physical Preparation for Later Life → Leisure Life → Satisfaction on Retired Life	2.123	.034
Daily Physical Preparation for Later Life → Leisure Life → Satisfaction on Relationship after Retirement	2.192	.028
Instrumental Physical Preparation for Later Life → Leisure Life → Satisfaction on Relationship after Retirement	2.091	.037

Sobel Test was conducted to identify the leisure life's mediating effect in the later life preparation's influence on the retired life satisfaction and the test results are as <Table 4> above.

The results showed that leisure life holds mediating effect in all variables.

## 5. Conclusion

The purpose of this study is to examine the influence of physical preparation for later life on retired life and identify the leisure life's mediating effect on the relationship between physical preparation for later life and retired life satisfaction. This study also seeks to verify the conditions of physical preparation for later life with positive influence on the retired life and measures for such conditions.

The research results from hypothesis testing are as follows.

In the relationship between retiree's later life preparation on retired life, causal relationship mostly had a positive influence.

First, physical preparation for later life had a positive influence on retired life satisfaction among retirement satisfaction. People showed higher retired life satisfaction when they were more physically prepared for the later life. Thus, physical preparation is the essential element for the later life.

Secondly, physical preparation for later life had a positive influence on satisfaction over relationship after retirement among retirement satisfaction. People showed higher satisfaction over relationship after retirement when they were more physically prepared for the later life. Also, physical preparation for later life acts as an important factor for relationship with others after retirement.

In the study on retiree's later life preparation on the retired life, leisure life's mediating effect mostly had a positive influence. The details are as follows.

First, leisure life had a mediating effect on physical preparation for later life's positive influence on retired life satisfaction. People showed active leisure life and higher retired life satisfaction when they were more physically prepared for the later life.

Secondly, leisure life had a mediating effect on physical preparation for later life's positive influence on the satisfaction over relationship after retirement. People showed active leisure life and higher satisfaction over relationship after retirement when they were more physically prepared for the later life.

Furthermore, physical preparation for later life had a positive influence on the retired life. As mentioned in preceding researches, physical preparation for later life appeared as an essential condition for later life after retirement.

Especially, leisure life had a mediating effect for the influence of physical preparation for later life on the retired life. Also, leisure life and physical preparation for later life showed a close influencing relationship. People showed active leisure life and higher retired life satisfaction when they were more physically prepared for the later life.

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