

Effects of Grit on the Successful Aging of the Elderly in Korea

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Abstract

The purpose of the study was to determine how grit in the elderly affects the level of successful aging of elderly people living in communities. A survey was conducted with 315 aging people in the metropolitan cities of Seoul and Incheon as well as mid- and small-sized cities, including Cheonan and Seosan, and agriculture or fishery-based regions including Tae-An and Hongseong. A correlation and hierarchical regression analysis to identify the effects of grit on successful aging were conducted. First, the correlation coefficient between major variables was low, in a range of 0.02–0.41. Second, successful aging of the elderly was seen to increase when perseverance was high. These results will make academic and practical contributions in gerontology, welfare of the aged, social welfare, and psychosociology areas.

Keywords: Grit, Successful Aging, The Elderly

1. Introduction

In 1907, William James divided human abilities into several types and was concerned about which abilities can predict a successful life among them¹. Over the decades, intelligence as ability for predicting achievement has been widely studied, but the findings have been inconsistent. Thus, the research interest in the variables of predicting success continued. For example, Terman & Oden² concluded that doctors and professors have particular non cognitive qualities, such as perseverance, self-confidence, and integration towards goals. In addition, creativity, vigor, emotional intelligence, charisma, self-confidence, emotional stability, and physical attraction have been focuses of research interest.

Recently, Duckworth and associates^{1–5} proposed grit as an ability to predict success. Specifically, they proposed that grit, defined as perseverance and passion for long-term goals, entails working strenuously towards challenges, maintaining effort and interest over years, despite failure, adversity, and plateaus in progress. The gritty individual

not only finishes the tasks at hand but pursues a given aim over years¹. Grit is an intrapersonal psychological strength characterized by the presence of long-term interests and passions, and the willingness to persevere through obstacles and setbacks to make progress towards goals aligned or separate from these passionate pursuits⁶. Grit can be seen as a concept focusing on willingness and stamina for long periods, and thus it might be an appropriate concept to measure psychological ability in the elderly. In a study of adults aged more than 25 years, the more the age increased, the more the grit did too⁴, and Duckworth et al¹², suggesting a quality of grit, although a stable individual difference, may nevertheless increase over the life span. However, previous studies on grit^{6–8} focused on adolescents and adults. Among six studies by Duckworth et al¹, the elderly were included as subjects, but in another four articles, the elderly were excluded instead of including adolescents. Thus, a study on older adults' grit is needed to find out whether grit explains successful aging. The most appropriate and general concept for a successful later life was successful aging.

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Representative scholars starting from Cicero (44 BC)'s consideration of successful aging were Row, Khan⁹, and Baltes & Baltes¹⁰. Successful aging is a reflection of life and satisfaction from life¹¹, and it is maintaining positive and ideal features in the processes of life¹². Fisher¹³ stated that a successful life is a method of coping in one's later years positively and wisely. It is also the process of psychological development on the elderly accepting past, present, and death, and maturing without losing the meaning and the purpose of life¹⁴, and a perceived level of the current picture of life, with adjustments for several changes along with aging¹⁵. Thus, successful aging is the result of a series of ongoing processes to adopt throughout one's life time¹⁰, and grit is a will that overcomes patiently to achieve an interest, a passion, and a goal through life^{1,3,4}, grit may be an important variable predicting successful aging. Indeed, Duckworth et al¹ found that grit predicted success in a military leadership program at West Point and success in competitive spelling bees even after accounting for the variance attributable to self-control. Based on those theoretical points and previous studies, the higher grit of the elderly, the higher the level of successful aging would be expected. The purpose of this study was to determine whether grit in the elderly affects the level of successful aging in elderly people living in communities.

2. Methodology

2.1 Subjects

A survey was conducted with 315 aging people from January to March, 2014 in the metropolitan cities of Seoul and Incheon as well as mid- and small-sized cities, including Cheonan and Seosan, and agriculture or fishery-based regions including Tae-An and Hongseong. Graduate students of H University in Korea were used as researchers, and the purposive sampling method was used in this study.

2.2 Instrument

2.2.1 Grit

Grit was assessed using Duckworth et al.'s scale with 12 items, rated on a 5-point Likert scale (1 = not at all like me to 5 = very much like me). It assesses perseverance for long-term goals that reflect passionate interests or

personally valued aims. To reformulate a scale, a factor analysis was carried out. Maximum likelihood was used for factor extraction, and direct oblimin with Kaiser normalization was used for factor rotation. When factor loading values, item-total correlations, internal coefficients were considered, one item (new ideas and new projects sometimes distract me from previous ones) was eliminated. Three sub-factors were composed based on this result (Table 1). The first factor consisted of five items (items 1, 3, 4, 5, 6) indicating 'passionate interests,' the second factor consisted of four items (items 7, 8, 9, 10) indicating 'perseverance,' and the third factor consisted of two items (items 11, 12) indicating 'industriousness.' In Duckworth et al.'s scale¹, the second and third factors of this study were one factor, which is 'Persistence of effort,' but it was divided into two sub-factors in this study. The third factor consisted of the questions 'I am a hard worker' and 'I am diligent,' and the elderly people in Korea recognized those two questions as their own diligent tendency. Cronbach's α values of the sub-factors were "0.79," "0.76," and "0.84," respectively.

2.2.2 Successful Aging

Successful aging was measured using Ahn and associates' scale¹⁶, with 25 items rated on a 5-point Likert scale. Cronbach's α for successful aging was "0.95".

2.3 Socio-demographic Characteristics of Subjects

Of the subjects, there was a higher percentage of female senior citizens: 65.5% of the total. The average age was 73.46, with those in their 70s accounted for 43.2%. 61.3% of the total had a spouse and 38.7% were living alone, either due to divorce or the death of a spouse. Those whose final education was primary school accounted for the largest proportion at 36.2%, followed by no education and middle-school education. Those without a religion consisted of 34.3%, taking up the largest share, followed by Christians at 33.0%. The largest number of the elderly lived in big cities at 42.5%, followed by agriculture or fishery-based regions at 30.8%, and small or mid-sized cities at 26.7%. Looked at by vocation, unemployed or housewives represented a majority at 54.5%, followed by agriculture or fisheries at 21.9%.

2.4 Statistical Analysis

Table 1. Correlation coefficient, mean, standard deviation, skewness, and kurtosis

Item	Factor loading value	Cronbach's α	% of variance
Passionate interests			
4. My interests change from year to year.	0.70	0.79	32.54
3. I become interested in new pursuits every few months.	0.68	0.79	32.54
5. I have been obsessed with a certain idea or project for a short time but later lost interests.	0.63	0.79	32.54
1. I often set a goal but later choose to pursue a different one.	0.59	0.79	32.54
6. I have difficulty maintaining my focus on projects that take more than a few months to complete.	0.52	0.79	32.54
Perseverance			
7. I have achieved a goal that took years of work.	0.81	0.76	18.71
8. I have overcome setbacks to conquer an important challenge.	0.80	0.76	18.71
9. I finish whatever I begin.	0.65	0.76	18.71
10. Setbacks don't discourage me.	0.55	0.76	18.71
Industrious			
11. I am a hard worker.	0.86	0.84	9.83
12. I am diligent.	0.84	0.84	9.83
Reverse items :1, 3, 4, 5, 6.			

The results of the survey were analyzed using the SPSS software (ver. 21.0 for Windows) and P values < 0.05 were considered to indicate statistical significance. We conducted a factor and reliability analysis to reformulate scales, a descriptive statistics analysis to identify socio-demographic characteristics and the degree of grit in successful aging, a one-way ANOVA to identify differences in grit and successful aging by sociodemographic characteristics, and conducted a correlation and hierarchical regression analysis to identify the effects of grit on successful aging.

3. Results

3.1 Level of Grit and Successful Aging

Descriptive statistics for grit and successful aging are shown in Table 2. The mean score for grit was a midpoint at 3.33 points (SD = 0.39), passionate interests was 3.27 points (SD = 0.62), perseverance was 3.19 points (SD = 0.73), and industriousness was high at 3.74 points (SD = 0.84). Successful aging was also at a midpoint at 3.21 points (SD = 0.58).

3.2 The Effects of Grit on Successful Aging

To identify the influence of grit on successful aging, a hierarchical regression analysis was conducted. Prior to the hierarchical regression analysis, Pearson's correlation analysis was carried out to confirm multicollinearity (data not shown). The correlation coefficient between major variables was low, in the range from "0.02" to "0.41." Thus, there was no multicollinearity issue.

Table 3 shows the results of hierarchical regression analysis, testing the effect of grit on successful aging. The variables in the first stage were gender, marriage state, education level, residence area, economic level, and health level, and they were used as control variables. Gender, marriage state, education level, and residence area were treated as dummy variables before the hierarchical regression analysis was performed. The variables in the second stage were passionate interests, perseverance, and industriousness. Looking at the influence on the successful aging by grit of the elderly (Table 3), the regression models were all significant and the Durbin-Watson value was "1.73," demonstrating that there is a low risk of multicollinearity problem. When explained excluding the control variables, grit of the elderly explained 14% of variances in successful aging of the elderly, and the total of ten variables explains 46%, and perseverance have shown to explain the most for the successful aging of the elderly.

When analyzing the explanatory power of each variable after eliminating the control variables based on the Model II, only the effects of perseverance on successful aging was significantly associated with levels of successful aging. The successful aging of the elderly have shown to increase when perseverance was high (Table 3).

Table 2. Descriptive statistics of the grit and successful aging

		Mean	S.D.
Grit		3.33	0.39
Grit	Passionate interests	3.27	0.62
Grit	Perseverance	3.19	0.73
Grit	Industriousness	3.74	0.84
Successful aging		3.21	0.58

industriousness was 3.74 points. Duckworth et al.'s study, the average rates of grit were 3.65 points and 3.41 points in study 1 and study 2, where elderly people were included, and it was higher than its grit of the elderly people in this study. Of course, over 25-year-old adults, not only 'old' people, were included in Duckworth et al.'s study, so it is difficult to make an absolute comparison with the result of this study. Only one of the grit's sub-factor, industriousness, was 3.71 points, which was higher than the old people included in Duckworth et al.'s study. Thus, the grit of elderly Koreans was somewhat lower level than adults of other countries, but one of the sub-factors, "industriousness," was found at a high level. The reason may be that elderly Koreans value diligence and sincerity. The elderly living today have experienced the Korean War, and they were pillars of industrialization.

Table 3. Effects of grit on successful aging in Korean elderly (n=306)

Variables		Model I		Model II	
		β	t	β	t
(Constant)			7.96***		5.70***
Control variables	Gender ^a	0.03	0.52	0.04	0.85
	Age	-0.15	-2.50*	-0.16	-32.00**
	Marriage state ^a	0.02	0.34	0.04	0.79
	Education level ^a	-0.02	-0.40	-0.04	-0.81
	Residence area ^a	0.10	2.02*	0.12	2.53*
	Economic level	0.24	4.09***	0.20	3.72***
Grit	Health level	0.30	4.84***	0.31	5.59***
	Passionate interests			-0.03	-0.65
	Perseverance			0.32	6.38***
	Industriousness			0.08	1.64
F		20.26***		24.98***	
R ²		0.32***		0.46***	
R ² change		-		0.14***	

*p < 0.05, **p < 0.01, ***p < 0.001.

^a: Dummy variables: gender (1 = male), marriage state (1 = with spouse), education level (1 = over middle school)

4. Discussion

A survey was conducted with 315 aging people from January to March, 2014 in metropolitan cities of Seoul and Incheon as well as mid and small-sized cities, including Cheonan and Seosan, and agriculture or fishery-based regions, including Tae-An and Hongseong county. The study aimed to determine whether grit in the elderly affected the level of successful aging for elderly people living in the community. First, the mean score for grit in the elderly was a midpoint at 3.33 points. Passionate interest was 3.27 points, perseverance was 3.19 points, and

This generation led economic development with the important values of hard work and diligence to overcome poverty from the war and to raise a stable family. Second, when analyzing the explanatory power of each variable after eliminating the control variables, the successful aging of the elderly was shown to increase when perseverance was high. Meanwhile, the importance of the elderly's health and economic level had been brought into relief in a study related to the elderly's quality of life and successful aging. For example, according to 2013 elderly statistics, the elderly's first worry was 'economic difficulty,' the second worry was 'health problems,'¹⁷.

In addition, the elderly's health problems and economic difficulties were important values affecting successful aging in past research^{10,18–23}. Thus, health and economic problems are important in the elderly's successful life.

However, the influence of 'perseverance' was higher than those of health and economic level in successful aging. Of course, health and economic level have a meaningful influence on the elderly's successful aging, but the result that showed grit's sub-factor, perseverance, was the most influential variable has significant implications for Korean society. Perseverance means years of endeavor and challenge for achieving a goal, overcoming a crisis, and completion of a purpose¹. Thus, for success in one's later years, more than services for healthy life (e.g., The National Long-Term Care Insurance) or services for economic stability (e.g., The Basic Old Age Pension), services for the establishment of targets and psychological aspects to accomplish those objects were suggested as being important. Gritty individuals clear long-term passions and make progress towards short-term goals inside and outside the context of established, long-term passionate pursuits⁶. Thus, social efforts are needed to establish a goal and to prepare to accomplish those goals from the middle years of one's life before arriving at senescence if possible. For example, it emphasized the importance of grit consistently by providing adult lifelong learning and education in preparation for later life, and it will be important to set the lasting lifetime goals before the stage of old age and getting ready for steady efforts.

On the one hand, Duckworth et al¹ proposed that one learns from experience that quitting plans, shifting goals, and starting over repeatedly are not good strategies for success. However, passionate interests did not have a significant effect on successful aging in this study. The stage of the elderly is also a stage of declining resources, both physically and psychologically.

Also, industriousness did not have a meaningful effect on successful aging. In the research of Duckworth et al¹, perseverance and industriousness were one factor called 'Persistence of effort,' but that was divided into two factors in this study. Perseverance had a significant effect on successful aging whereas industriousness did not have a significant effect; the two factors were shown to be independent in affecting successful aging of the elderly. Thus, the point that perseverance and industriousness are independent, not a single dimension, was confirmed. This study determined grit was the most powerful predicting variable of the elderly's successful aging.

This implies that elderly welfare service, which concentrates on the health and economic side for the elderly's life quality improvement, should turn to the side of service that concerns psychological issues in the elderly. This will make academic and practical contributions in gerontology, welfare of the aged, social welfare, and psychosociology areas.

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