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Short Communication

Factors influencing life satisfaction in middle-aged women in south Korea: A descriptive research using panel data

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ABSTRACT

Background & Aim: Life after middle age accounts for almost half of the life cycle, along with global increases in life expectancy; it is important to manage the life satisfaction of middle-aged women as they transition from adulthood to old age. This study sought to investigate the life satisfaction of middle-aged women and identify the factors affecting them in various ways.

Methods & Materials: As secondary research, sample data were sourced from the 2016 Korean Longitudinal Study of Aging -sixth wave of KLoSA- by the Ministry of Employment and Labor and the Korean Employment Information Service in Korea.

Results: Factors affecting the life satisfaction of middle-aged women include individual factors such as religion, household income, marriage, and educational background (all $p<.05$); health-related factors such as depression and smoking; family-related factors such as frequent contact with nonresident children; and socio-cultural factors such as leisure activity or trips (all $p<.05$).

Conclusion: The life satisfaction and influencing factors for middle-aged women identified in this study should be used as a basis for successful and healthy aging preparation in women's health policy.

Introduction

The World Health Organization (WHO) analyzed the life expectancy in 35 Organization for Economic Co-operation and Development (OECD) countries and found that Korean men born in 2030 had the highest life expectancy in the world at 84 years and women at 91 years (1). With this extension in life expectancy, life after middle age accounts for about half of the life cycle. Hence, it is important to manage the life satisfaction for middle-aged women in their transition from adulthood to old age (2). Middle-aged women experience significant changes in their life cycles, such as decreased physical functions, including menopause, changes in the quality of family life due to decreased child-related responsibilities and household chores, an extension of average life span, and changes in social roles (3, 4). Middle-aged women also have to consider a variety of physical, mental, and psychological factors in order to improve their life satisfaction because they have the responsibility to nurture children and foster the generation of parents, the burden of a combined role in society and work, and the physical aging of cells and decreasing of immunological materials production (5). While Korea ranks eleventh in the world in terms of GDP and twenty-ninth in terms of per capita GDP, Koreans' QOL ranked twenty-eighth overall among 38 countries, including 34 OECD countries, as per OECD's 2016 Better Life Index (6), and is considered to below.

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Given that these results are generally low and have been on the decline for the past four years, it is necessary to determine the factors affecting life satisfaction for Koreans and understand social policy implications (7). Since each individual's life depends on unique and specific characteristics, socio-environmental factors, interactions between individuals, and the environment (8), it is necessary to consider the numerous complex factors when describing life satisfaction cohesively. Middle age is also the most active period in life when people are actively involved in familial and social activities. It is necessary to reveal the factors affecting life satisfaction in this period to ensure a healthy old age.

However, the previous life satisfaction studies of middle-aged women were not significant compared to that of men or women of other age groups and were mostly health-related QOL studies about menopause (3,4,6). Therefore, this study was conducted to identify various factors influencing life satisfaction in order to improve the same for middle-aged people.

This study was conducted to explore various factors affecting the overall life satisfaction of middle-aged women. Specifically, we wanted to identify individual, health, familial, social, and cultural factors—and determine which variables have a positive or negative effect on life satisfaction.

Methods

Study design and sampling

As secondary research, sample data were sourced from the 2016 Korean Longitudinal Study of Aging (sixth wave of KLoSA) by the Ministry of Employment and Labor and Korean Employment Information Service in Korea (Korean Employment Information Service in Korea, 2018). The Korean Longitudinal Study of Aging (KLoSA) is a nationally representative sample of more than 10,000 persons at least 45 years of age in the Republic of Korea (South Korea). The KLoSA interviews all age-qualifying individuals in a household. Among other topics, it collects information on work and income and health and disability and includes detailed questions on family transfers. This study's participants were 1,622 middle-aged women between the ages of 53 and 64, as of 2016.

Measures

In this study, four domains were classified for factors analysis influencing life satisfaction in participants as follows.

Demographic factors

Marital status, education level, annual income, and religious affiliation comprised the demographic factors of this study. Marital status was classified as married, separated, divorced, widow/er, and unmarried. For annual income, we used the sum total of wage, pension, sideline, self-employed or business income earned, and income status was further classified into a quintile range. Religious affiliations were categorized as existence and nonexistence.

Health-related factors

The health-related factors were classified under subjective health condition, degree of activity, limitations due to the health condition, number of chronic diseases, smoking status, alcohol consumption status, and depression symptoms. Subjective health conditions were measured on a five-point scale from very poor (1) to very good (5) and measured how respondents perceived their health. The limit on activities (days) due to health conditions was measured on a four-point scale from (1) to (4). The measure for the number of chronic diseases was divided into two options: yes (1) and no (2), and related to the diagnosis of nine diseases, including high blood pressure, diabetes, cancer (malignant tumor), lung disease, liver disease, heart disease, cerebrovascular disease, mental illness, arthritis, and rheumatoid disease, and the total number of diseases answered by option (1) was considered. Smoking was divided into non-smokers and past and present smokers;

alcohol consumption was divided into non-drinkers and past and current drinkers. Depression symptoms included a Center for Epidemiologic Studies Depression Scale (CES-D) consisting of ten questions, each of which is measured on a four-point scale from zero to three, with a range of 0 to 30. In CES-D, the higher the score, the higher the depression. CES-D is widely used as a diagnostic tool to identify depression in the elderly population.

Family-related factors

Variables included as family factors were the number of household members, number of surviving children, frequency of meetings with non-current housemaids, and frequency of contact with non-participating children (telephone, letter, e-mail, etc.). The meeting frequency with children who were not living together was measured on a 10-point scale from no meetings (1) to 4 or more times a week (10), and contact frequency with children who were not living together was measured on a 10-point scale from no contact (1) to 4 or more times a week (10).

Socio-cultural factors

Social and cultural factors included the number of cultural performances, hobby-related gatherings, or programs. Among them, the number of encounters with acquaintances was measured on a 10-point scale from no acquaintances (1) to almost every encounter (10). The number of all meeting groups was measured, and the number of volunteer activities was measured by the monthly average of activity hours. Thus the number of volunteer activities included was measured by if there is no participation (0) and more than one hour (1). The number of trips, tours, outings, and culture performance was measured by none, one to two, and more 3 times, and participation for hobbies or entertainment was measured by none (0) and yes (1). The validity of this tool has been demonstrated, and Cronbach's alpha for reliability ranged between 0.75-0.81 among the previous studies in this study (6,14).

Life satisfaction

The satisfaction level of life was used to measure the overall satisfaction level of life (quality) compared to people of the same age. The range of responses in this paragraph consists of 10-point intervals from 0 to 100, and the higher the number of points, the higher the satisfaction with life. The validity of this tool has been demonstrated, and Cronbach's alpha for reliability ranged between 0.84-0.86 among the previous studies in this study (2,5,6).

Ethical considerations

This study was approved by the institutional review board of a public health center in South Korea with more than 1,800 patient beds (Reference No. SUE-21130456).

Statistical analysis

The data collected were analyzed using the SPSS statistical software (version 25.0; SPSS Inc., Chicago, IL, USA) as follows: The demographic characteristics of participants were analyzed using descriptive statistics. This study implemented hierarchical multiple linear regression analysis to identify factors influencing the participants' life satisfaction. To identify the reliability of each item of the depression symptoms measure, we calculated Cronbach's alpha. All statistical results were considered statistically significant at p-values below 0.05.

Results

The demographic characteristics of the study population

Demographic characteristics of the study population are reported in Table 1. In this study, the characteristics of middle-aged women in South Korea are classified into 5 main domains—individual, health-related, family-related, socio-cultural, and

independent factors. A majority of the participants were married (1201 or 74.04%). The education level of high school graduates was highest among participants (754 or 46.49%). There were many in 3 (512 or 31.57%) or 4 (742 or 45.75%) quantile of the top in total annual income. The majority of participants were religious (1152 or 71.02%). In health-related factors, subjective health condition was 3.43±1.01 scores which means a slightly low degree. The activity limitation due to health conditions was 2.11±0.32 scores which means that they experienced some limitations due to their health conditions. The number of chronic diseases in participants was highest at between 1 and 2 (843 or 51.97%). Participants in this study were mostly non-smokers (1467 or 90.44%), and non-periodic alcohol consumers (845 or 52.10%) outnumbered regular drinkers. Depression symptoms were scored 6.03±4.77, which means they experienced some form of depression in their daily lives. In family-related factors, many participants lived together with someone (1468 or 90.51%) than alone. Also, most participants had kept in touch with their children who were nonresidents by meeting with or contacting them. In socio-cultural factors, the number for meetings with acquaintances and participating in the club for friendship appeared to be rather. More participants did not perform volunteer activity (1475 or 90.94%). The experience frequency for cultural performance, entertainment, trip or outing presented a little bit lack. The overall life satisfaction (quality) as an independent variable was 65.53±18.75 and was little bit high scores for participants.

Table 1. The demographic characteristics of the study population (N=1622)

Classification	N (%)	M±SD
Individual factors		
Marital status		
Married	1201(74.04)	
Divorce/widowed	267(16.46)	
Bereavement/unmarried	154(9.50)	
Education status		
≤Elementary school	206(12.70)	
Middle school	456(28.11)	
High school	754(46.49)	
>University or college	206(12.70)	
Total annual income (US $)		31.658±21.457
1 division (bottom quarter)	79(4.87)	
2 division	289(17.81)	
3 division	512(31.57)	
4 division (the highest 25%)	742(45.75)	
Religion		
No	470(28.98)	
Yes	1152(71.02)	
Health-related factors		
Subjective health condition		3.43±1.01
Activity limitation due to health status		2.11±0.32
The number of chronic diseases		
No	678(41.80)	
1–2	843(51.97)	
> 3	101(6.23)	
Smoking		
No	1467(90.44)	
Yes/Ex-smoker	155(9.56)	
Alcohol consumption		
No	845(52.10)	

Yes/ex-drinker	777(47.90)	
Depression symptom†		6.03±4.77
Family-related factors		
Number of household members		
Live alone	154(9.49)	
≥2	1468(90.51)	
Number of surviving children		2.54±0.87
Meeting with nonresident children (number of times)		5.42±2.53
Contact with nonresident children (number of times)		8.26±1.78
Socio-cultural factors		
Meeting frequency with acquaintance		7.71±2.43
Number of attending club for friendship		1.57±0.73
Existence of volunteer activity		
No	1475(90.94)	
Yes	147(9.06)	
Experience for trip or outing (count/week)		
No	598(36.87)	
1–2	623(38.41)	
> 3	401(24.72)	
View of cultural performance (count/week)		
No	1042(64.24)	
1–2	453(27.93)	
≥3	127(7.83)	
Participation of entertainment		
No	1543(95.13)	
Yes	79(4.87)	
Independent factor **Overall life satisfaction (quality)**		65.53±18.75

† Depression symptoms include a Center for Epidemiologic Studies Depression Scale (CESD)

The factors affecting life satisfaction in the study population

The factors affecting life satisfaction in the study population are shown in Table 2. In this study, a hierarchical linear regression analysis was performed to verify the research model. First, the results (Model 1) of the effects of individual factors on life satisfaction were statistically significant ($F=41.23$, $p<.05$), indicating the suitability of the regression model. Among the independent variables, it was shown that the existence of religion ($\beta=0.95$), household income ($\beta=0.66$), marital status ($\beta=0.18$), and education level ($\beta=0.13$) affected the satisfaction of life, with all variables showing statistically significant differences. The explanatory power of Model 1 was 19.0%. The F value of Model 2, including individual and health factors, was statistically significant ($F=36.79$, $p<0.05$), and the model's explanatory power was 24.0%. Subjective health conditions ($\beta=0.31$), depression symptoms ($\beta=-0.14$), and smoking ($\beta=-0.07$) in the phase of controlling individual factors showed statistically significant differences among health factors. Model 3's F value change, including individual factors, health factors, and family factors, was not significant compared to Model 2, nor did the model's explanatory power change significantly. With individual and health factors under control, only the frequency of contact with nonresident children ($\beta=0.09$) had a significant overall effect on life satisfaction. The F value of Model 4, which includes all individuals, health, family, and socio-cultural factors, was statistically significant at 20.01 ($p<0.05$), with 30% of the model's explanatory power. With individual, health, and family factors under control, only trip or outing experiences ($\beta=0.08$) showed statistically significant differences.

Table 2. The factors influencing life satisfaction in the study population (N=1622)

Variables	Model 1			Model 2			Model 3			Model 4		
	B	S.E	β	B	SE	β	B	S.E	β	B	S.E	β
Constant	45.58*	2.61		38.55*	3.68		34.88*	4.86		31.75*	4.67	
Individual factors												
Marital Status	6.89*	1.55	0.18	5.33*	1.22	0.15	5.64*	1.55	0.15	5.12*	1.45	0.15
Education Status	1.69*	0.67	0.13	0.75	0.51	0.09	0.75	0.51	0.06	0.71	0.53	0.06
Total annual income	3.88*	0.66	0.27	2.75*	0.53	0.17	2.41*	0.53	0.15	2.34*	0.67	0.25
Religion	2.86*	0.86	0.95	2.34*	0.82	0.09	2.31*	0.81	0.08	1.78*	0.89	0.14
Health-related factors												
Subjective health condition				4.78*	0.61	0.31*	4.81*	0.58	0.32	4.55*	0.55	0.33
Activity limitation due to health status				0.08	0.68	0.01	0.13	0.64	0.05	0.28	0.68	0.04
The number of chronic diseases				-1.33	0.71	-0.05	-1.01	0.68	-0.06	-1.02	0.67	-0.05
Smoking				-8.89*	2.55	-0.07*	-8.02*	2.32	-0.05	-7.59*	2.55	-0.08
Alcohol consumption				-0.08	0.91	-0.01	-0.02	0.88	-0.02	-0.09	0.93	-0.01
Depression symptom				-0.61*	0.11	-0.14*	-0.51*	0.10	-0.14	-0.41*	0.11	-0.15
Family-related factors												
Number of household members							-0.45	2.20	-0.008	-0.44	2.11	-0.008
Number of surviving children							0.35	0.53	0.04	0.31	0.53	0.04
Meeting with nonresident children							-0.47	0.23	-0.07	-0.45	0.25	-0.07
Contact with nonresident children							0.71*	0.35	0.09	0.68*	0.31	0.08
Socio-cultural factors												
Meeting frequency with acquaintance										0.41	0.21	0.06
Number of attending club for friendship										0.57	0.77	0.01
Existence of volunteer activity										0.77	2.16	0.01
Experience for trip or outing										1.51*	0.58	0.08
View of cultural performance										-0.51	0.66	-0.03
Participation of entertainment										1.57	1.76	0.02
R^2(Adjusted R^2)	0.19			0.24(0.05)			0.26(0.02)			0.30(0.04)		
F	41.23*			36.79*			26.82*			20.01*		

*P<.05

Discussion

Demographic characteristics have shown that educational background, marital status, and household income affect overall life satisfaction, which typically translates into personal characteristics to maintain the household. This is because most middle-aged women in modern society are in charge of raising their children with men (9, 10). Their educational background is also related to job choices and salaries. The study found that the subjective health condition of middle-aged women affects life satisfaction is a result consistent with many prior studies (11), as middle-aged women experience direct physical aging, such as menopause, and are prone to exposure to various diseases caused by aging. Also, during middle-aged women, hormonal production decreases dramatically, causing mood swings that affect psychological and mental conditions (3, 5). Therefore, if a study to understand subjective health-related changes and the degree of depression that reflect objective physical changes is conducted on middle-aged women, it is believed that important information on health care to improve life satisfaction can be obtained. South Korea estimates that the smoking rate of women who were recommended based on

lung cancer incidence in 2017 was 6.0%, and that, in fact, it will exceed 17% (12). In South Korea, men's smoking rate is gradually decreasing, but it is not particularly decreasing for women (13), which can be a social problem. In addition, since this study presented that smoking to be a factor affecting life satisfaction, it is necessary to explore in-depth what benefits or inconveniences caused by smoking affect life satisfaction. This will be an important material that can improve life satisfaction while addressing the social problems of women's smoking.

Middle-aged women can experience both raising their children and their children becoming independent as adults. During this period, the family structure is reorganizing due to changes in the role of family members (11, 14). While this is a time when the role of child-rearing decreases, the potential ability of women is shifted to a new direction due to increased freedom, the change in the role within the family can experience psychological conflicts such as emptiness and lonesomeness. In addition, prior research suggests that the family system and the role change of women in this period lead to the re-adaptation of married life and cause stress (14), so the frequency of encounters, the frequency of contact with independent children was presented to mediate crisis or stress for a woman. The previous studies have differed dependent variables with this study but can be interpreted in the same context.

A meaningful result of this study is that travel and leisure experiences in models, including all factors affecting life satisfaction, showed a significant statistical difference. Proper leisure activities are factors that improve the life satisfaction of middle-aged women by relieving the transitional crisis of middle-aged people (15; 16). Middle-aged women in modern society value leisure activities because of improving education level and reducing household labor. Middle-aged women gain rest and recovery through leisure activities and maintain their physical and mental health (17). Through leisure activities, middle-aged women can also express their egos, such as the development of personality and self-realization, and promote continuous growth and development (18). In response, for middle-aged women, leisure activities need to be recognized as active and integrated health promotion activities that can enhance their life satisfaction and encourage and increase their various leisure activities. As such, we explained the meanings of the factors affecting the life satisfaction of middle-aged women, and this study is believed to be meaningful because we explored various factors besides health-related factors. After completing the study, the following recommendations can be made for future research: 1) A similar study need to be conducted with larger sample size, so that one may be able to use the diverse demographic information of family and leisure activities when comparing the results; 2) It is also necessary to conduct qualitative research to identify in-depth factors affecting their life satisfaction.

Conclusion

In this study, factors affecting the life satisfaction of middle-aged women, including subjective health conditions, were identified as individual factors (religion, household income, marriage, and educational background), and health-related factors (depression, smoking), and family-related factors (frequent contact with nonresident children), and socio-cultural factors (leisure activity or trip). In this study, the regression model, which includes all the factors which individual characteristics, health-related, family-related, and socio-cultural factors that affect the life satisfaction of middle-aged women, was most significantly descriptive, which can be interpreted as the life satisfaction being affected by more complex factors than any single factor in middle-aged women. The life satisfaction and influencing factors of middle-aged women identified in this study need to be used as a basis for successful and healthy aging preparation in women's health policy.

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Conflict of interest

The authors declare no conflict of interest, financial or otherwise.

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