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POVERTY AND QUALITY OF LIFE IN KOREAN ADULTS: UTILIZATION OF THE 8TH KOREA NATIONAL HEALTH AND NUTRITION EXAMINATION SUR-VEY (2019-2020)

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Abstract
Vulnerable groups are more likely to be exposed to factors harmful to health, and their ability to cope with exposure to risk factors is weak, so they can easily deteriorate physically and mentally. The purpose of this study was to identify the factors that affect the quality of life according to the life cycle of adult recipients of basic livelihood. This study analyzed secondary data from the 8th National Health and Nutrition Examination Survey (2019-2020) conducted in Korea. As a result of the study, the quality of life of young recipients of basic livelihood were the best and the quality of life of the old recipients of basic livelihood was the lowest, suicidal ideation, and subjective health status of elderly recipients of basic livelihood were identified as variables affecting their quality of life. The results of this study are expected to be used as basic data to develop a multidisciplinary approach that considers factors affecting each life cycle, and to develop detailed policies and programs for each life cycle in order to improve the quality of life of recipients of basic livelihood in Korea.
Keywords: poverty; quality of life; basic livelihood security; Korea National Health and Nutrition Examination Survey (KNHANES)

1. INTRODUCTION

In Korea, recipients of basic livelihood security are those whose recognized income is 30-50% of the median income and less than the minimum cost of living [1]. The living expenses are subsidized by dividing them into livelihood benefits, medical benefits, housing benefits, and education benefits according to each evaluation standard. The basic livelihood security benefit pays the recipients for clothes, food, fuel, and other basic necessities for daily living to maintain their livelihood, and is paid in cash on a regular basis every month. Basic livelihood security benefits include general livelihood benefits, livelihood benefits for facility recipients, emergency livelihood benefits, and conditional livelihood benefits. The amount of support varies depending on income and disability [1,2].

Although the low-income class is not simply called the vulnerable class, there are many cases in which the vulnerable class has low income. These vulnerable groups are more likely to be exposed to factors harmful to health and are easily deteriorated physically and mentally due to their weak ability to cope with them after exposure to risk factors [3]. This can be said to be the reason why various studies should be conducted. Income and quality of life were examined in the 'World happiness report 2021', and the higher the quality of life, the higher the income and assets [4]. As the quality of life decreases, the proportion of government subsidies in the proportion of non-earned income tends to increase. At the government level, the government provides the necessary salaries to those in need, guaranteeing a minimum standard of living and fostering self-sufficiency, and although they are in a position to receive basic protection, they encounter unfavorable studies on their quality of life and emotional crisis [5].

This study attempted to identify factors affecting the quality of life of adult recipients of basic livelihoods by using the 8th Korea National Health and Nutrition Examination Survey (KNHNES) data. First of all, wit was tried to identify the factors that affect the quality of life of basic living recipients protected by the government and identify the factors that affect the positive and developmental life of them. In addition, it is intended to be the basis for improving negative thinking and preparing guidelines for educational materials for a positive life. In the case of basic livelihood recipients, the relationship between variables such as occupation, stress, education level, subjective health status, and suicidal ideation is to be checked by life cycle. As a result of this study, by life cycle of basic livelihood recipients, variables affecting quality of life were different. By life cycle, in the case of young people, job and stress influenced the quality of life in middle-aged, occupation, education, subjective health status, and suicidal ideation, and in the elderly, subjective health status appeared to affect quality of life.

It is expected to be used as basic data to develop customized policies and programs segmented by life cycle to improve the quality of life of basic livelihood recipients.

2. Materials and Methods

2.1 Design

This study is a secondary data analysis using the KNHNES. The KNHNES is a legal survey on health behaviors, chronic disease prevalence, and food and nutrition intake conducted in

accordance with Article 16 of the National Health Promotion Act and used as basic data for health policy. The purpose of this survey is to calculate representative and reliable statistics on the national health level, health behavior, and food and nutritional intake; and through this, the goal setting and evaluation of the comprehensive national health promotion plan, and health promotion program development. In this study, data from the 8th period 2019-2020 were used and analyzed. This study obtained Institutional Review Board approval (IRB No.: 1041549-221011-SB-150) from the Research Ethics Committee of the affiliated university, and submitted a pledge to comply with statistical data users and a security pledge in accordance with the KNHANES raw data use procedure of the Korea Center for Disease Control and Prevention; after which, approval for use was obtained. Data from the KNHANES are collected with a unique number that cannot be identified, so there is no personal information of the subject, and anonymity and confidentiality are guaranteed.

We used the eighth KNHANES data of adults age 19 years or older. After excluding 2,730 subjects aged 18 years or younger and 11,889 subjects who are not recipients of the basic livelihood security program, 843 individuals were included in the analysis. Among them, 162 subjects experienced basic livelihood security program for young-age, 331 subjects experienced middle-aged basic livelihood security program, and 350 subjects experienced basic livelihood security program for the elderly.

2.2 Measures

2.2.1 Independent Variable of Main Interest

Basic livelihood security program referred to self-reported data in response to the question, “Are your households currently receiving basic livelihood security program?” Responses were categorized into three groups: Yes (past or present), No, Don’t know.

2.2.2 Dependent Variables: QOL Indices EQ-5D

For quality of life, EQ-5D (EuroQol-5Dimension) was used. EQ-5D is a 5-point scale from levels 1 to 5 in five domains: 1) motor ability, 2) self-management, 3) daily activities, 4) pain or discomfort, and 5) anxiety and depression. The measured score is measured as a score ranging from -1 point in the worst health state to +1 point in the best health state using a value evaluation set that reflects the weight determined based on the general population.

2.2.3 Socioeconomic and Demographic Factors

Gender, marital status, occupation, household income, education level, cohabitation, house ownership, residency region, and unmet medical needs were included as sociodemographic factors in the analysis. Individuals were classified as married (including widowed, previously married and divorced) and single. Occupational status was divided into two categories: employed and unemployed (including housewife and student). Equivalized household income was used by dividing the household monthly income and grouped into four household income quartiles. Education level was categorized into four groups: elementary school or lower, middle school, high school, and college or higher. The residency regions were categorized into urban (administrative divisions of a city: Seoul, Daejeon, Daegu, Busan, Incheon, Kwangju, or Ulsan) or rural (not classified as a city).

2.2.4 Health Behavior Factors

Health behavior factors such as frequency of alcohol use, BMI, hypertension, arthritis, diabetes mellitus, insurance, subjective health status, suicidal ideation, melancholy and stress were included as covariates in our analyses. Using the cutoffs suitable for our population according to a previous study [6], body mass index (BMI) was categorized into three groups: underweight (< 18.5 kg/m2), normal (18.5–23.0 kg/m2) and overweight (>23.0 kg/m2). In response to the question “Do you have hypertension (arthritis/diabetes mellitus) that a doctor diagnosed?”. The answer “yes” meant that the subject received a diagnosis of hypertension (arthritis/diabetes mellitus) by a doctor, “no” meant that the not received a diagnosis by a doctor. Subjective health status was assessed with the question, “How do you usually perceive your health?” (“very good,” “good,” “normal,” “poor,” “very poor”). The responses “very good” “good” and “normal” were considered to indicate “good,” and “poor” and “very poor” were considered to indicate “poor”.

2.3 Statistical Analysis

Since the KNHANES was collected by the method of complex sample design, an analysis plan file with household and individual weights (basic weight and correlation analysis weight) was created and analyzed using the IBM SPSS/WIN 25.0 program. When assigning weights, inclusion errors due to differences in the number of households and populations between the sample design time and the survey time, unequal extraction rates, and non-response errors of non-participants in the survey were corrected, so that the representativeness of related estimates such as the health behavior of Koreans, the target population, the prevalence of chronic diseases, and accuracy can be increased. For the degree of sociodemographic factors and health-related factors according to the life cycle of basic livelihood security program recipients, frequency and weighted percentages, mean and standard deviation were used using frequency analysis and crossover analysis during complex sample analysis. Complex sample t-test and ANOVA were used, and the significance level was set to $p < .050$. The effects of sociodemographic factors and health-related factors on the quality of life of recipients of basic livelihood security program were analyzed using complex sample linear regression analysis.

3. Results

3.1. Demographic and sociological factors of the subject

The average quality of life of the adult recipients of basic livelihood security included in this study was 0.95 points for young adults, 0.89 points for middle-aged people, and 0.83 points for seniors, indicating a significant result ($F=221.014$, $p<.001$). There were significant differences between the three groups in gender, marital status, occupation status, household income, education level, and cohabitation. In the young group, there were more unmarried people (78.8%), and the elderly were more likely to have no occupation (80.3%). In the elderly group, 77.2% of household income was low, and 66.3% had less than elementary school education. Young people and middle-aged people often lived together (87.5% and 77.5%, respectively) (Table 1).

Table 1. Comparison of general characteristics according to life cycle (n= 843)

Variable	Categories	Young	Middle	Elderly	χ2/F(p)
Gender	Male	66(44.5)	149(54.3)	119(33.3)	25.341
	Female	88(55.5)	166(45.7)	226(66.7)	(<.001)
Marital status	Married	38(21.2)	269(84.7)	329(95.3)	374.928
	Unmarried	116(78.8)	46(15.3)	16(4.7)	(<.001)
Occupation	Unemployed	63(43.7)	131(45.4)	228(80.3)	77.907
	Employed	79(56.3)	155(54.6)	57(19.7)	(<.001)
Household income	Lowest	43(27.9)	152(47.0)	271(77.2)	
	Low-middle	52(33.2)	93(29.2)	49(15.2)	143.244
	Middle-high	37(22.7)	44(15.2)	22(7.4)	(<.001)
	High	22(16.2)	26(8.7)	1(0.2)	
Education level	≤Elementary	2(0.7)	64(18.2)	193(66.3)	
	Middle	8(3.5)	51(15.1)	49(18.5)	352.185
	High	83(60.9)	123(45.3)	29(11.2)	(<.001)
	≥College	49(35.0)	50(21.3)	13(3.9)	
Cohabitation	alone	21(12.5)	83(22.5)	172(46.2)	72.707
	≥2	133(87.5)	232(77.5)	173(53.8)	(<.001)
House ownership	No	120(76.7)	234(72.7)	235(65.9)	6.977
	yes	34(23.3)	81(27.3)	110(34.1)	(.112)
Residency region	Urban	59(42.5)	118(38.9)	126(39.3)	0.802
	Rural	95(57.5)	197(61.1)	219(60.7)	(.767)
Unmet medical needs	No	119(90.7)	248(88.8)	254(88.8)	0.590
	yes	11(9.3)	33(11.2)	33(11.2)	(.802)
Health related quality of life(±SD)		0.95(.079)	0.89(.163)	0.83(.177)	221.014 (<.001)

3.2 Factors related to the subject's health

Health-related factors according to the life cycle of all adult basic livelihood security recipients had significant differences between the three groups except for depression. In all three groups, more people drank (96.0%, 90.9%, 69.9% respectively) than non-drinking and BMI was more overweight in all three groups (59.1%, 64.1%, and 61.5% respectively). High blood pressure, arthritis, and diabetes were the most common in the elderly (62.8%, 38.0%, 28.8%), and the rate of receiving medical coverage was also the highest in the elderly (60.9%). Subjective health status was higher in the group that all three groups perceived as good (66.7%, 77.6%, and 86.1% respectively) than in the group that perceived as bad. Stress awareness was higher in the young and middle-aged groups (42.6% and 43.2% respectively) (Table 2).

Table. 2 Comparison of health-related factors according to life cycle (n= 843)

Variable	Categories	Young	Middle	Elderly	χ2/F(p)
Alcohol	Non-drinking	10(4.0)	33(9.1)	105(30.1)	72.042
	Drinking	142(96.0)	277(90.9)	226(69.9)	(<.001)
BMI	<18.5kg/m2	14(10.3)	7(1.9)	17(5.1)	19.429 (.019)
	≧18.5, <23kg/m2	49(30.6)	104(34.0)	101(33.4)	
	≧23kg/m2	90(59.1)	199(64.1)	212(61.5)	
Hypertension	No	145(94.3)	214(69.7)	128(37.2)	192.643
	yes	9(5.7)	101(30.3)	217(62.8)	(<.001)
Arthritis	No	139(98.5)	249(90.1)	182(62.0)	116.541
	yes	3(1.5)	40(9.9)	107(38.0)	(<.001)
Diabetes mellitus	No	149(95.9)	267(86.2)	240(71.2)	58.481
	yes	5(4.1)	48(13.8)	105(28.8)	(<.001)
Insurance	National health care	112(76.5)	180(58.2)	128(39.1)	69.320
	Medical care	42(23.5)	135(41.8)	217(60.9)	(<.001)
Subjective health status	Good	98(66.7)	236(77.6)	255(86.1)	22.161
	Bad	45(33.3)	55(22.4)	37(13.9)	(.001)
Suicidal ideation	None	65(96.0)	121(83.6)	146(90.8)	11.569
	Have	4(4.0)	26(16.4)	18(9.2)	(.004)
Melancholy	None	58(86.9)	113(77.4)	127(77.4)	4.674
	Have	11(13.1)	34(22.6)	37(22.6)	(.182)
Stress	Much	63(42.6)	128(43.2)	87(25.2)	22.632
	Little	89(57.4)	181(56.8)	242(74.8)	(<.001)

3.3 Factors affecting the quality of life according to the life cycle of adult recipients of basic livelihood

In order to identify the factors affecting the quality of life, the factors that showed significant differences between the three groups were input as the independent variable with quality of life as the dependent variable. For sociodemographic characteristics, gender, marital status, occupational status, household income, education level, and cohabitation were used; and health-related factors used included alcohol use, BMI, hypertension, diabetes, arthritis, insurance type, subjective health status, suicidal ideation, and stress perception.

3.3.1. Factors affecting the quality of life of young receiving basic livelihood

As a result of multiple regression analysis, the factors affecting the quality of life of young recipients of basic livelihood were occupation and stress, and their explanatory power was 45.6% (F=410.656, p<.001). Compared to those without occupation, the subjects with occupation (β=.023) and those with a lower perception of stress (β=.039) had higher quality of life.

3.3.2 Factors affecting the quality of life of middle-aged basic livelihood recipients

Factors affecting the quality of life of middle-aged basic livelihood recipients were occupation, education level, subjective health status, and suicidal ideation; where their explanatory power was 44.1% (F=582.787, p<.001). Those who had occupation (β=.085), those with a college degree or higher (β=.082), those who perceived their subjective health as good (β=.054), and those who had not had suicidal thoughts in the past year (β=.092) had a high quality of life.

3.3.3 Factors affecting the quality of life of elderly recipients of basic livelihood

The factor that affected the quality of life of elderly recipients of basic livelihood was subjective health status, and the explanatory power was 22.3% (F=150.532, p<.001). The quality of life was higher in those who subjective health status as good (β=.065) compared to the group who perceived it as bad.

Table 3. Factors effecting quality of life according to the cause of stress (n= 843)

Variable	Categories	Young			Middle			Elderly		
		B	t	p	B	t	p	B	t	p
Gender (Ref. Female)	Male	.008	0.572	.568	.005	0.197	.844	-.035	-0.92	.359
Married status (Ref. Unmarried)	Married	.011	0.557	.578	.042	1.113	.267	-.027	-0.453	.651
Occupation (Ref. Unemployed)	Employed	.023	2.401	.017	.085	2.988	.003	.072	1.803	.073
Household income (Ref. Lowest)	Low-middle	.036	1.545	.124	.005	-0.214	.831	.033	0.679	.498
	Middle-high	.007	0.295	.768	.018	0.596	.552	-.014	-0.238	.812
	High	.021	1.062	.290	.034	1.237	.218	-	-	-
Education level (Ref. ≤Elementary)	Middle	.052	0.874	.384	.006	0.17	.865	.021	0.55	.583
	High	.065	1.786	.076	.059	1.62	.107	.066	1.393	.166
	≥College	.064	1.553	.122	.082	2.308	.022	.040	1.295	.197
Cohabitation (Ref. alone)	≥2	-.003	-0.143	.887	-.031	-0.857	.392	.034	1.052	.295
Subjective health status (Ref. Bad)	Good	.005	0.337	.737	.054	2.809	.006	.065	2.056	.041
Alcohol (Ref. Drinking)	Non-drinking	.024	0.698	.486	.016	0.786	.433	-.002	-0.058	.954
BMI (Ref. ≧23kg/m2)	<18.5kg/m2	.007	0.332	.740	-.100	-2.292	.230	-.015	-0.216	.829
	≧18.5, <23kg/m2	.025	1.67	.097	-.022	-0.894	.372	.034	1.389	.167
Hypertension (Ref. Yes)	No	.039	1.079	.282	.005	0.181	.857	-.041	-1.676	.096
Arthritis (Ref. Yes)	No	.054	1.473	.143	.040	1.484	.140	.064	1.729	.086
Diabetes mellitus (Ref. Yes)	No	.043	0.558	.577	.013	0.376	.707	-.011	-0.353	.724
Insurance (Ref. Medical care)	National health care	.027	1.343	.181	.000	-0.024	.981	-.004	-0.122	.903
Suicidal ideation	None	.026	0.898	.370	.092	2.736	.007	.125	1.736	.084

(Ref. Have)										
Stress (Ref. Have)	Little	.039	2.781	.006	.011	0.48	.632	.051	1.277	.204
		R^2=.456 F=410.656(<.001)			R^2=.441 F=582.787(<.001)			R^2=.223 F=150.532(<.001)		

4. Discussion

This study attempted to identify factors affecting the quality of life of adult recipients of basic livelihoods by using the 8th KNHANES (2019-2020) data. As a result of the study, the quality of life of the young recipients was determined to be the best and the quality of life of the elderly recipients of the basic livelihood was the lowest. This is considered a result similar to that of previous Korean studies which state that the quality of life decreases with increasing age [7], but it is a phenomenon different from the U-shape in most developed countries [8,9]. According to the life cycle, the occupation and stress level of the young basic living recipients were identified as the variables that affect the quality of life. In the middle-aged basic living recipients, the occupation, education level, subjective health status, and suicidal ideation were the biggest factors. And the subjective health status of the elderly basic living recipients was the variable that mostly affected quality of life. Based on the results of this study, we would like to discuss the factors that affect the quality of life according to the life cycle of the adult recipients of basic livelihood.

The existence of occupation and perceived stress level were found to be factors influencing the quality of life in young recipients of basic livelihoods. The current generation of young people has a higher level of education than the middle-aged and elderly, but they are experiencing more difficulties than ever before due to difficulties in finding employment caused by the instability of the labor market, unstable housing due to rising housing prices, and debt. Similar to the results of this study, previous studies report that people with occupation had higher life satisfaction than those without occupation, and when occupation stability was high, life satisfaction was higher [10]. However, it is said that even if you have occupation and have a successful occupation, working long hours causes physical and mental stress and lowers life satisfaction [11]. In addition, the quality of life of the low-income group is lower than that of the high-income group due to unemployment, poor neighbors, and limited social mobility due to low occupation stability and high stress perception [12,13]. A study by Harr et al. surveyed citizens of seven countries including New Zealand [14], and a study by Taşdelen- Karçkay and Bakalım who investigated workers in Turkey [15], found that work-life balance (WLB) had a positive effect on life satisfaction. WLB is emerging as a socially important value. However, in the case of Korea, which work culture expects employees to work for long hours, it has reduced working hours to 40 hours per week, reducing wage income and leading to resignation or low-wage labor due to stress depending on working conditions. So basic recipients need an active social security policy to compensate for wage reduction.

For middle-aged basic livelihood recipients, occupation, education level, subjective health status, and suicidal ideation were found to be factors affecting the quality of life. According to the developmental characteristics of middle age, physical changes such as hormone secretion and changes in circadian rhythms, as well as psychological changes such as workplace problems related to early retirement, and expectations and conflicts in family relationships between elderly parents and children are experienced. According to the UN's "World Happiness Report 2019", happiness inequality is increasing worldwide, and it is analyzed that this is because happiness inequality within countries is increasing [16]. In other words, gaps in opportunities such as economic or educational level are highly likely to result in inequality in subjective quality of life. In the case of education, many studies suggest that high-educated people have higher life satisfaction than low-educated people [17,9]. It is believed that life satisfaction increases when a stable occupation is obtained through high education and the possibility of raising to a high income is high [18]. In addition, previous studies also showed that the more positive the subjective health status of oneself during this period, the more satisfied with life they are and resilience to overcome crises increase [19]. In the middle age, when family conflict and occupation satisfaction are low, the degree of depression is high, leading to repeated suicidal thoughts and lowering the quality of life [20]. In particular, it is believed that the quality of life of the middle-aged and low-income class people who are in charge of the household becomes more difficult as they lost their occupations or their salaries were reduced during the COVID-19 outbreak, and their ability to spend time for cultural life, hobbies, and health decreases, leading to a decrease in the quality of life. In middle age, while playing various roles at home and in society, they experience a feeling of social alienation and loss of presence due to early retirement and retirement preparations, and experience an inner sense of poverty, which is a factor that threatens the quality of life. Stable employment and welfare should be expanded through occupation expansion for low-educated and unemployed people or occupation-startup education and training programs.

In the case of elderly basic livelihood recipients, subjective health status was found to be the only factor influencing the quality of life. In Korea, the elderly poverty rate is 38.9% as of 2020, which is very high compared to the average of around 10% in OECD countries [21]. Subjective health status by age of the Statistics Korea in 2020, 71.5% of those aged 60 and over answered that their health status is very bad or bad, so the low quality of life of the elderly in Korea is slightly different from that of many advanced countries. This can be seen as an anomaly [22]. In old age, physical, mental, emotional, and social functions all decrease, and physical symptoms, anxiety and anger are experienced. At this time, the elderly is very closely related to whether they can live a healthy and satisfactory old age according to how they evaluate and perceive their health status [23]. In particular, economic level affects subjective health status and the lower the economic level, the more likely the subjective health status is poor [24]. In addition, it was found that those who perceived their socioeconomic status as upper class perceived their subjective health status as better than those who did not [25]. Although the government-led project for occupations for the elderly is being carried out for economic support, working hours and wages are very low, and even more, some recipients of the national basic livelihoods are excluded. Various measures should be implemented to raise the salary level of the employment project, so that the old-age occupation

project to supplement the income security system can actually provide an economic function that can help the livelihood of the elderly.

This study is meaningful in that it presents basic data for national policy and program development by identifying the factors affecting the quality of life by dividing the basic livelihood recipients in Korea by life cycle. In addition, KNHANES tries to represent Korea as a whole, and it has the advantage that it can be generalized and applied for all the population. However, since KNHANES are data collected by cross-sectional surveys, there are limitations in that it is difficult to identify a causal relationship between variables and that the life cycle is not further subdivided.

5. Conclusions

This study attempted to identify factors affecting the quality of life of adult recipients of basic livelihoods by using the 8th KNHANES (2019-2020) data. As a result of this study, variables that affect quality of life are occupation and stress in the case of young basic livelihood recipients, occupation, education level, subjective health status and suicidal ideation in middle-aged basic living recipients, and subjective health status in elderly basic livelihood recipients. Therefore, in order to improve the quality of life of Korean Basic Livelihood Recipients, a multidisciplinary approach that can consider factors affecting each life cycle is needed. The results of this study can be used as basic data to develop customized policies and programs segmented by life cycle to improve the quality of life of basic livelihood recipients.

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