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Binary logistic analyses on responses of being healthy and unhealthy to positive and negative mindsets in caregivers

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Abstract: This paper is a descriptive research study on self-perceived evaluations of health in caregivers: (1) It starts with questions about whether caregivers with patients think of being healthy just by themselves. These healthy caregivers have positive mindsets and are less stressed than others; (2) Perceived health status (healthy and unhealthy) was evaluated as a response to factors including demographic characteristics, positive psychological capital, and job stress (negative) using binary logistic analysis; (3) 79 individuals from the perceived good health group were compared with 98 from the perceived poor health group, totaling 177 participants. The mean score of positive psychological capital for the perceived good health group was higher than that of the other group (64.0 ± 8.2 : 61.2 ± 8.0). Additionally, the mean score of job stress for the perceived good health group was lower than that of the other group (98.9 ± 11.0 : 102.2 ± 10.7); (4) In this study, the caregiver group that was healthy had higher positive psychological capital and lower job stress than the other group.

Keywords: *Caregiver, Job stress, Positive psychological capital.*

1. Introduction

The Korean society is expected to enter the super-aged society in 2025 at 9.81 million, [1]. In the Resident Registration Data of South Korea as of the end of 2023, the number of people in their 70s and older was 6,319,402, which exceeded that of those in their 20s (6,197,486). And life expectancy, which had been 79.6 years in 2008, is being extended to 83.6 years in recent data from the National Statistical Office, [1] and is predicted to rise after that continuously. The increase in the aged population in South Korea is related to the prevalence of chronic diseases, [1]. The number of elderly people alone in South Korea is 9.1%, and they require the help of family members or caregivers. From the Labor and Sexual Harassment Counseling Case Report (2022~2023) of the Seoul Senior Care Workers General Support Center, long-term care workers are neglected in the basic management of labor, and their jobs are unstable due to easy dismissal, and they experience unilateral contract failure from the care beneficiaries, which adversely affects not only being guaranteed stable working hours but also calculating retirement pay, [2]. In addition, they are excluded from the benefits of social insurance as workers and are exposed to sexual and other harassment or unfair work, [2]. Their job stress as the negative mindset adversely affects their health [3] and their organizational performance [4] with turnover intention [3]. Conversely, the positive mindset increases the happiness of individuals and organizations by forming close bonds between oneself and others [5] has a positive effect on organizational performance [6] and is recognized as capital. It is needed to find an approach to improve health of caregivers in identifying caregiver's job stress, subjective health status, and positive psychological capital and identifying the correlation between these variables. It is intended to promote high-quality care services by raising caregivers' health levels in an era when social care is required.

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1.1. Research Purpose and Research Question

This paper aims to classify the caregiver's positive mental capital, job stress, and perceived health status as basic data for developing a caregiver social support program. The research problems are as follows. First, "Is there a difference in perceived health status according to general characteristics (including work characteristics), positive psychological capital, and job stress?" Second, "Are positive psychological capital and job stress related to caregivers (including Nursing care workers) and perceived health status?"

2. Research Methodology

2.1. Research Design

This paper is a descriptive research study to verify the connection among positive psychological capital, job stress, and perceived health standing of caregivers (including Nursing care workers).

2.2. Study Subjects, Data Collection and Ethical Considerations

This study was conducted based on survey data collected to prepare basic data for the development of a caregiver social support program under the support of Kyung-dong University in 2023 and the Korea Research Foundation in 2024. The survey was conducted using a structured questionnaire from June 1, 2023 to August 31, 2023. Using the G*power 3.1.9.4 program, Odds ratio 2.4, significance level 0.05, power ((1-ß) 0.85, R^2 other X 0.6, and when X distribution Lognormal was applied the minimum number of samples was 101 people. Research ethics were explained to caregivers who agreed to this study, and a total of 220 questionnaires were collected, of which 177 were finally analyzed, excluding missing questionnaires.

2.3. Research Tool

2.3.1. Perceived Health Status

Perceived health status is the National Quality of Life Index among the OECD countries and the National Statistical Office's indicator system, and healthy and very healthy are defined as healthy groups, and the rest are used as unhealthful groups, [7].

2.3.2. Job Stress

This study used the tool to measure 'Korean job stress' [8]. It consists of 4 questions for job demand, four questions for job autonomy, 3 questions for relationship conflict, 2 for job insecurity, 4 for the organizational system, 3 for inappropriate compensation, and 4 for workplace culture, and is a Likert 4-point scale. The development author allowed the use of the tool, and the original tool was used without modification. The reliability of the tool was Cronbach's α=.82.

2.3.3. Positive Psychological Capital

The Korean form of the Positive Psychological Capital Scale (K-PPC), which was improved and modified by the positive psychological capital tool jointly established by Luthans, et al. [6] and Oh [9] was used [10]. It obtained permission from the site that owns the copyright of the positive psychological capital tool and the developer of the K-PPC tool. The reliability of the development tool was Cronbach's α=.90.

2.4. Data Analysis

The SPSS 27.0 statistical program was used to analyze the following

A. Presenting technical statistics of the subject's general characteristics (including work characteristics)

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B. The chi-square test, Fisher exact test, and independent sample t-test was conducted in evaluating the differences in general characteristics (including work characteristics), positive psychological capital, and job stress distribution between the Perceived Health group and the Unhealthy group.

C. Multiple Logistic Regression was conducted in evaluating the connection among general characteristics (including work characteristics), positive psychological capital, job stress, and Perceived health.

3. The Results of the Study

3.1. Distribution of General Characteristics (Including Work Characteristics) and Positive Psychological Capital, Average and Standard Deviation of Job Stress

This paper looked at gender, age distribution, marital status, and final education level as general characteristics for 177 caregivers (including caregivers). The gender showed a distribution of 0 males (0.0%) and 177 females (10.0), and the age group showed a distribution of 4 males (2.2%) under 50 years old, 66 (37.3%) from 50 to 59 years old, 96 (54.2%) from 60 to 69 years old, and 11 (6.2%) over 70 years old. The marital status showed a distribution of 129 married (72.9%), 6 unmarried (3.4%), 9 divorces (5.1%), 29 widowed (16.4%), and separated 4 (2.2%), and the final academic background was 6 unschooled (3.4%), 4 elementary schools (2.2%), 34 middle schools (19.2%), and 119 high schools (19.2%), and 119 high schools(67.2%), 14 university students (7.9%). There was no graduate school. Work characteristics were examined regarding job type, certificate, place of work, work experience, etc. The ratio of occupations was 89 nursing care workers (50.3%) and 88 caregivers (49.7%), of which 173 (97.7%) had a nursing care worker license and 2 (1.1%) had a nursing assistant license. Two had no qualifications. In the case of workplaces, 81 university hospitals (45.8%), 12 general hospitals (6.8%), 69 nursing hospitals (39.0%), 2 other hospitals (1.1%), and 13 other facilities (7.3%) had no response to working in nursing facilities. The period of employment in care services was less than 5 years. The distribution was (52.6%), 52 people (29.4%) for more than 5 years and less than ten years, 50 people (28.2%) for more than 10 years and less than 15 years, 24 people (13.6%) for more than 15 years and less than 20 years, and 11 people (6.2%) for more than 20 years. Table 1 shows the average and standard deviation of positive psychological capital and job stress by general characteristics (including work characteristics).

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Table 1.
General characteristics (including work characteristics), positive psychological capital, and job stress descriptive statistics.

	Total (N=177) n (%)	Job psychology, M±SD	Job stress, M±SD
Sex			
Male	0 (0.0)	.	.
Female	177 (100.0)	62.4 ± 8.2	100.7 ± 10.9
Age group (years)			
〈 50	4 (2.2)	66.5 ± 4.4	100.8 ± 10.8
50 ~ 59	66 (37.3)	63.5 ± 7.7	103.9 ± 10.5
60 ~ 69	96 (54.2)	62.1 ± 8.6	100.1 ± 10.9
〉 70	11 (6.2)	57.5 ± 6.6	91.7 ± 8.7
Married status			
Married	129 (72.9)	62.8 ± 7.8	100.6 ± 11.3
Unmarried	6 (3.4)	63.0 ± 9.9	107.0 ± 7.3
Divorced	9 (5.1)	61.1 ± 10.1	100.8 ± 10.1
Bereaved	29 (16.4)	60.6 ± 8.7	101.1 ± 9.5
Separated	4 (2.2)	65.0 ± 12.6	92.0 ± 12.0
Education			
Uneducated	6 (3.4)	57.5 ± 4.3	102.7 ± 11.9
Elementary	4 (2.2)	69.8 ± 5.7	92.5 ± 5.1
Middle	34 (19.2)	61.2 ± 9.0	97.9 ± 10.3
High	119 (67.2)	62.9 ± 8.2	101.4 ± 11.2
College	14 (7.9)	61.9 ± 6.3	103.9 ± 8.7
Graduate	0 (0.0)	.	.
Occupation			
care worker	89 (50.3)	63.6 ± 7.1	103.8 ± 9.6
Caregiver	88 (49.7)	61.2 ± 9.0	97.7 ± 11.3
Certification			
Care Worker	173 (97.7)	62.6 ± 8.1	100.5 ± 10.9
Nursing Assistant	2 (1.1)	56.5 ± 5.0	110.0 ± 11.3
No Certification	2 (1.1)	56.0 ± 15.6	112.0 ± 8.5
Workplace			
University	81 (45.8)	61.1 ± 9.3	97.3 ± 11.1
General	12 (6.8)	61.5 ± 9.1	100.8 ±11.2
Nursing	69 (39.0)	63.6 ± 6.8	104.6 ± 9.7
Other	2 (1.1)	61.5 ± 5.0	97.0 ± 11.3
Nursing Facility	0 (0.0)	.	.
etc	13 (7.3)	65.5 ± 5.2	102.2 ± 9.1
Work period (year)			
Five or less	40 (22.6)	64.3 ± 8.2	100.5 ± 9.7
5 or more but less than 10	52 (29.4)	62.4 ± 7.9	101.6 ± 11.6
10 or more but less than 15	50 (28.2)	61.3 ± 7.3	101.9 ± 11.8
15 or more but less than 20	24 (13.6)	62.7 ± 9.9	100.3 ± 10.2
20 or more	11 (6.2)	60.5 ± 9.0	

3.2. Analysis of Perceived Health Status Differences by General Characteristics (Including Work Characteristic), Positive Psychological Capital, and Job Stress

Of the 177 subjects, 79 were in the perceived good health status group and 98 in the perceived bed health status group. Table 2 shows the distribution of general characteristics (including work characteristics), positive psychological capital, and the verification of differences in perceived health due to job stress. As a result of the chi-square test and Fisher exact test, there was no relationship between the general characteristics (including work characteristics) and perceived health of the subject. A normality test and an independent sample t-test were performed to evaluate the mean difference between positive psychological capital, job stress, perceived good health status group, and perceived bed health status group. There was a significant mean difference among the two groups in the perceived

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good health status group and the perceived bed health status group in positive psychological capital (p=0.025<0.05) and job stress (P=0.047<0.05).

Table 2.
Analysis of perceived health status differences by overall characteristics (including work characteristic cs), positive psychological capital, and job stress.

	Perceived health status, n(%) or M±SD			
	unhealthy	**healthy**	**Total**	**p-value**
Total	98	79	177	
Sex				
Male	0 (0.0)	0 (0.0)	0 (0.0)	
Female	98 (100.0)	79 (100.0)	177 (100.0)	.
Age group (years)				
〈 50	2 (2.0)	2 (2.5)	4 (2.3)	
50 ~ 59	36 (36.7)	30 (38.0)	66 (37.3)	
60 ~ 69	53 (54.1)	43 (54.4)	96 (54.2)	
〉 70	7 (7.1)	4 (5.2)	11 (6.2)	0.95
Married status				
Married	68 (69.4)	61 (77.2)	129 (72.9)	
Unmarried	3 (3.1)	3 (3.8)	6 (3.4)	
Divorced	6 (6.1)	3 (3.8)	9 (5.1)	
Bereaved	19 (19.4)	10 (12.7)	29 (16.4)	
Separated	2 (2.0)	2 (2.5)	4 (2.3)	0.71
Education				
Uneducated	5 (5.1)	1 (1.3)	6 (3.4)	
Elementary	2 (2.0)	2 (2.5)	4 (2.3)	
Middle	19 (19.4)	15 (19.0)	34 (19.2)	
High	65 (66.3)	54 (68.4)	119 (67.2)	
College	7 (7.1)	7 (8.9)	14 (7.9)	
Graduate	0 (0.0)	0 (0.0)	0 (0.0)_	0.71
Occupation				
Care Worker	45 (45.9)	44 (55.7)	89 (50.3)	
Care Giver	53 (54.1)	35 (44.3)	88 (49.7)	0.20
Certification				
Care Worker	96 (98.0)	77 (97.5)	173 (97.7)	
Nursing Assistant	1 (1.0)	1 (1.3)	2 (1.1)	
No Certification	1 (1.0)	1 (1.3)	2 (1.1)	0.98
Workplace				
University	48 (49.0)	33 (41.8)	81 (45.8)	
General	6 (6.1)	6 (7.6)	12 (6.8)	
Nursing	34 (34.7)	35 (44.3)	69 (39.0)	
Other	2 (2.0)	0 (0.0)	2 (1.1)	
Nursing Facility	0 (0.0)	0 (0.0)	0 (0.0)	
etc	8 (8.2)	5 (6.3)	13 (7.3)	0.48
Work period (year)				
5 or less	18 (18.4)	22 (27.8)	40 (22.6)	
5 or more but less than 10	30 (30.6)	22 (27.8)	52 (29.4)	
10 or more but less than 15	32 (32.7)	18 (22.8)	50 (28.2)	
15 or more but less than 20	12 (12.2)	12 (15.2)	24 (13.6)	
20 or more	6 (6.1)	5 (6.3)	11 (6.2)	
Positive psychological capital	61.2 ± 8.0	64.0 ± 8.2		0.025*
Job stress	102.2 ± 10.7	98.9 ± 11.0		0.047*

Note: *p<.05, **p<.01, ***p<.001.

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3.3. A Binary Logistic Regression Analysis for Evaluating Related Factors

Among the overall features of the subjects, the size of either group of the two groups was too small to assume and analyze the normal distribution. In addition, general characteristics such as age, marital status, and final learning and work characteristics such as work place, labor contract type, and shift type were also found to not satisfy the normal distribution or model suitability. Both job stress and positive psychological capital showed significant group differences in the perceived good health standing and perceived bed health standing groups. In the case of positive psychological capital, P=0.027<0.05, OR (95% CI) 1.04, and a unit increase in positive psychological capital increased the probability of belonging to the perceived good health status group by 0.04 times. Regarding job stress, P=0.049<0.05, OR (95% CI) 0.97, and the probability of belonging to the perceived good health status group decreased by 3% when job stress increased by one unit.

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Table 3.
A binary logistic regression analysis for evaluating related factors participants.

	Perceived health			
	unhealthy	**healthy**	**OR(95% CI)**	**P-value**
Age group (years)				
〈 50	2	2	1 (ref)	
50 ~ 59	36	30	0.83 (0.11, 6.28)	0.86
60 ~ 69	53	43	0.81 (0.11, 6.00)	0.94
〉 70	7	4	0.57 (0.06, 5.78)	0.64
Married status				
Married	68	61	1 (ref)	
Unmarried	3	3	1.12 (0.22, 5.73)	0.90
Divorced	6	3	0.56 (0.13, 2.33)	0.42
Bereaved	19	10	0.59 (0.25, 1.36)	0.21
Separated	2	2	1.12 (0.15, 8.16)	0.92
Education				
Uneducated	5	1	1 (ref)	
Elementary	2	2	5.00 (0.27, 91.52)	0.28
Middle	19	15	3.95 (0.42, 37.50)	0.23
High	65	54	4.15 (0.47, 36.64)	0.20
College	7	7	5.00 (0.46, 54.51)	0.19
Graduate	0	0	.	.0.14
Occupation				
Care Worker	45	44	1 (ref)	
Caregiver	53	35	0.67 (0.37, 1.23)	0.20
Certification				
Care Worker	96	77	1 (ref)	
Nursing Assistant	1	1	1.25 (0.08, 20.26)	0.88
No Certification	1	1	1.25 (0.08, 20.26)	0.88
Work place				
University	48	33	1 (ref)	
General	6	6	1.46 (0.43, 4.90)	0.55
Nursing	34	35	1.50 (0.78, 2.86)	0.22
Other	2	0	.	1.00
Nursing Facility	0	0	.	
etc	8	5	0.91 (0.27, 3.02)	0.88
Work period (year)				
5 or less	18	22	1 (ref)	
5 or more but less than 10	30	22	0.60 (0.26, 1.38)	0.23
10 or more but less than 15	32	18	0.46 (0.20, 1.08)	0.07
15 or more but less than 20	12	12	0.82 (0.30, 2.56)	0.70
20 or more	6	5	0.68 (0.18, 2.61)	0.58
Positive psychological capital	98	79	1.04(1.01, 1.08)	0.027*
Job stress	98	79	0.97 (0.95, 1.00)	0.049*

Note: OR (95% CI): odds ratio and 95% CI were estimated using univariate logistic model.
*p<.05, **p<.01, ***p<.001.

4. Discussion

Health has become an essential keyword in Korean society, which is experiencing rapid aging and an increasing number of single-person households. According to the World Health Organization, health is not simply a disease or disability. Still, a state of physical, mental, and social well-being, makes it difficult for individual efforts to sustain and promote health. Objective indicators like life expectancy and prevalence and the health status they feel subjectively regardless of the presence or absence of disease are an essential health criterion. The Organization for Economic Co-operation and Development also compares subjective health status between countries. When comparing the subjective health status of each country announced in 2022, 52.4% of Korea is healthy, followed by 86.4% in the United States,

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71.3% in the Netherlands, 70.1% in Spain, 66.8% in Sweden, 65.1% in France, and 64.3% in Germany. It is almost at the bottom of the OECD countries. Only 44.3% of the caregivers who are the subjects of this study recognize that they are healthy, so it is necessary to raise it to 2.4% of Korea's average health status [11]. On the other hand, in Korea, perceived health status is identified in the social survey items every four years. As of 2022, 31.5% of those aged 60 or older perceived themselves as healthy, while 44.8% of participants aged 60 or older in this study perceived themselves as healthy. In addition, it was confirmed that positive psychological capital and job stress had a significant relationship regardless of whether or not caregivers themselves perceived themselves to be in a healthy state. According to Kim, et al. [4] as the positive psychological capital of blood center nurses improved by one unit, the odds ratio of the healthy group in subjective health increased significantly by 1.1 times (95% confidence interval (CI): 1.0–1.1), and as job stress increased by one unit, the odds ratio of the healthy group in subjective health increased significantly by 0.9 times [95% confidence interval (CI): 0.8–0.9]. In this study, both the healthy and unhealthful groups of perceived health conditions showed significant results, and regardless of the group, an increase in positive psychological capital by one unit increased the probability of belonging to the perceived good health status by 0.04 times. In the case of job stress, P=0.049<0.05, OR (95% CI) 0.97, and a unit increase in job stress decreased the probability of belonging to the perceived good health status by 3%. This is consistent with the results of a study on the relevance of lowering job stress as positive psychological capital increases [12, 13] suggesting that positive psychological capital and job stress can be important variables in perceived health status.

5. Conclusions and Suggestions

In this study, we tried to find ways to improve the perceived good health status of caregivers by identifying the job stress, perceived health status, and positive psychological capital of caregivers and identifying the correlation between these variables. Increasing one unit of positive psychological capital applied to all groups without distinction according to the perception of the caregiver's perceived good health status resulted in a 0.04-fold increase in the probability of belonging to the perceived good health status. In addition, in the case of job stress, increasing by one unit to P=0.049<0.05, OR (95% CI) 0.97, the probability of belonging to the perceived good health status decreased by 3%. In addition, in an international comparison of the Organization for Economic Co-operation and Development, the level of subjective health status in Korea was low (52.4% on average in 2022 in Korea). Still, the number of caregivers did not reach it (average 44.3% for survey caregivers in 2023). Considering that positive psychological capital is a capacity that can be developed by learning [14] it is necessary to increase subjective health status by developing it. In Korea, the subjective health status is identified in the social survey items every four years. As of 2022, 31.5% of people aged 60 or older perceived themselves as healthy, while 44.8% of participants aged 60 or older in this study recognized that they were healthy. This study is also meaningful in that it was confirmed that social activities need to be actively encouraged at the age of 60 to 69, considering that social activities have a positive effect on health and that there were no studies to compare and discuss differently due to the lack of research on caregivers. It is suggested to study the development and application of various programs to improve the working environment and positive psychological capital that can reduce the job stress of caregivers. Finally, Korean society provides quality care services by improving the perceived health status of caregivers through social support in an era when social care is required.

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Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

References

[1] Statistics Korea, *Korean statistical information service (KOSIS)*. 2025.

[2] J. E. Ye, H. Ye, E. J. Jeun, M. J. Seo, J. S. Kim, and J. S. Yoo, *Study for worker' happiness*. Seoul: Samsung Economic Research Institute, 2013.

[3] M. H. Bak and H. M. Bang, "The intermediation effect of organizational immersion in the relationship between positive psychological capital and job performance of local children's centers," *Humanities Society*, vol. 11, no. 5, pp. 1757–1770, 2020. https://doi.org/10.22143/HSS21.11.5.125.2024.04.02

[4] J. Kim, J.-W. Hwang, and M.-J. Park, "Associations between perceived health status and positive psychology capital and job stress Among Korean Red Cross Workers," *Journal of Industrial Convergence*, vol. 18, no. 6, pp. 75-83, 2020. https://doi.org/10.22678/JIC.2020.18.6.07

[5] S. J. Jang, S. B. Koh, and M. G. Kang, *A study on the development and standardization of Korean job stress measurement tools*. South Korea: Korea Institute of Occupational Safety and Health at the Korea Occupational Safety and Health Agency, 2004.

[6] F. Luthans, C. M. Youssef, and B. J. Avolio, *Psychological capital: Developing the human competitive edge*. Oxford, UK: Oxford University Press, 2007.

[7] Mind Garden, *Mind Garden: Transforming lives through psychological assessment*. United States: Mind Garden, 2025.

[8] Statistics Korea, *Subjective health status [National Indicator System]*. South Korea: Statistics Korea, 2024.

[9] S. H. Oh, "The relationship among positive psychological capital, job stress, and job burnout of Taekwondo masters," *Journal of Korea Society for Wellness*, vol. 14, no. 3, pp. 241-252, 2019. https://doi.org/10,21097/ksw2019.08.14.3.241

[10] H. Gong and S. Lee, "The effects of psychological capital and social support on job stress and job burnout among public social workers," *GRI Research Conference*, vol. 20, no. 3, pp. 69-99, 2018.

[11] H. Y. Kim and S. K. Nam, "The effects of positive psychology capital on job stress and organizational commitment: Mediating effect of happiness," *Asia-Pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology*, vol. 8, no. 3, pp. 553–561, 2018. https://doi.org/10.35873/ajmahs.2018.8.3.051

[12] Y. N. Won and Y. M. Choi, "Job stress and job satisfaction of local child care center workers: Mediating effects of positive psychology resources," *The Journal of Humanities and Social Sciences*, vol. 8, no. 5, pp. 761–780, 2017. https://doi.org/10.22143/HSS21.8.5.43

[13] F. Luthans, J. B. Avey, B. J. Avolio, S. M. Norman, and G. M. Combs, "Psychological capital development: Toward a micro intervention," *Journal of Organizational Behavior*, vol. 27, no. 3, pp. 387–393, 2006.

[14] Statistics Korea, *Social survey: Subjective health status by age*. Daejeon: Statistics Korea, 2022.