

콜센터 상담사의 정신건강상태와 건강증진생활양식에 관한 연구

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Mental Health Status and Health-Promoting Lifestyle Behaviors among Call Center Employees

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Background: Call center employees experience high levels of occupational stress and other mental health issues. This study aimed to examine the relationship between mental health status and health-promoting lifestyles among call center employees.

Methods: A secondary data analysis from a descriptive cross-sectional study of 302 call center employees was conducted. Call center employees were asked to complete the Depression Anxiety Stress Scale (DASS) and the Health Promoting Lifestyle Profile-II (HPLP-II).

Results: Participants' overall DASS score was 23.87±13.98 out of 63. Among the six subscales of the HPLP-II, participants' highest scores were for interpersonal relations, spiritual growth, and stress management, whereas physical activity had the lowest score. Participants with a severe level of mental health issues (i.e., depression, anxiety, and stress) reported lower levels of health-promoting lifestyle behaviors, especially in the areas of physical activity, spiritual growth, interpersonal relationships, and stress management.

Conclusions: As call center service sectors increase in modern industries, so does the need to address the physical and mental health needs of its employees. Healthcare providers and organizations should closely and routinely monitor employee's levels of depression, anxiety, and stress and develop organizational and health-related policies for the call center sector. Additionally, the development and implementation of health-related interventions to promote healthy lifestyle behaviors is critical for call center employees.

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INTRODUCTION

A high level of work-related stress is associated with increased depression, anxiety, and decreased levels of healthy lifestyle behaviors. Professional occupation has been found to be related to lifestyle-related chronic diseases. Some health problems might arise from physical working conditions (e.g., exposure to heat or noise, work injuries) or work characteristics (e.g., high workload and lack of flexibility in working hours).¹⁾

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Call center employees providing customer services via telephone are important for modern businesses. They experience high levels of occupational stress resulting from emotional abuse from unsatisfied customers,²⁾ poor working conditions, low work-related social status, low pay, and a limited career path.^{3,4)} Difficulty in coping with these poor working environments can negatively affect their level of physical activity and psychological health status. Recently, the mental health of call center employees has become an issue of concern and a recent study reported high levels of depression, anxiety, and stress among them.³⁾

Health-promoting lifestyle behaviors (HPLB) are multi-dimensional patterns of perceptions and behaviors that sustain or increase an individual's level of physical, social, and psychological well-being, and prevent further health problems.^{5,6)} Recent research showed that work-related stress was closely related to depression and lower levels of engagement in HPLB.^{6,7)} Although there is evidence of a positive effect of HPLB on maintenance and improvement of health, engaging in HPLB is probably challenging for workers.^{1,8,9)} Understanding health behaviors and the patterns of relationships with job characteristics and mental health among call center workers are important because a health-promoting lifestyle is a key factor in the improvement of health.

Mental health status, including depression and anxiety, has been found to be negatively related to HPLB among various populations.^{7,8,10,11)} Depression causes low energy levels, apathy, and loss of interest in pleasurable activities, all likely to make it difficult for one to engage in HPLB.⁸⁾ People under stress showed low levels of HPLB.¹²⁾ Stress has a negative impact on health status directly through physiological/psychological effects and can also indirectly alter health-related behaviors.¹³⁾ That is, employees experience stress and challenges in coping with, and have difficulty maintaining a healthy lifestyle, which can lead to smoking and physical inactivity.

There is scarce research on the mental health status of call center employees in South Korea and the relationship between their mental health and HPLB. This study aimed to examine and understand the mental health status of employees working at a credit card call center. The specific purpose of this study was to 1) examine call center employees' HPLB, and 2) explore the relationships between their mental health status and HPLB.

METHODS

1. Design, sample, and procedures

The original study protocol and secondary analysis proposal was approved by the university's institutional review board (IRB number: 1044396-201601-HR-005-01, 1044396-201706-HR-113-01). This descriptive study was conducted to determine the relationships between demographic characteristics, work-related variables, mental health status, and HPLB in a sample of 302 call center employees. This survey was part of a larger study investigating the mental health of Korean call center employees and the potential predictors of their mental health status.³⁾ Data were collected from a call center of a leading credit card company in South Korea. The participants were recruited in March 2016 from a credit card call center, which comprised approximately 1,000 employees from eight outsourcing companies in Daejeon. The research purpose, procedures, and the anonymous nature of the study were explained to the potential participants before obtaining permission for data collection.

Three hundred fifty hard copies of the questionnaire were distributed to all employees who provided informed consent, and 343 copies were completed and returned (response rate of 98.0%). During data cleaning, 41 questionnaires were excluded due to a large amount of missing data on the main study variables, yielding a final sample of 302 participants.

2. Measurements

The Depression Anxiety Stress Scale (DASS)¹⁴⁾ was used to measure mental health status with regard to self-reported symptoms of depression, anxiety, and stress. This scale has been widely validated and used with many different populations.¹⁵⁾ We used the 21-item version, which consists of seven items each in the three subdomains. Each item is responded to with regard to severity/frequency of the symptom using a 4-point Likert scale (0=does not apply to me at all or never, to 3=applies to me most often or almost always). Subscale scores were summed and multiplied by two. Possible scores range from 0 to 126 for the DASS total score, with high scores representing high levels of depression, anxiety, and stress.¹⁴⁾ The developers originally created severity classifications for depression, anxiety, and stress as normal (0-9 for depression, 0-7 for anxiety, 0-14 for stress),

mild (10-13 for depression, 8-9 for anxiety, 15-18 for stress), moderate (14-20 for depression, 10-14 for anxiety, 19-25 for stress), severe (21-27 for depression, 15-19 for anxiety, 26-33 for stress), and extremely severe (28 or over for depression, 20 or over for anxiety, 34 or over for stress). In this study, the five severity classifications were combined into three classes for each of the symptoms of anxiety, depression, and

stress. The three classes were normal, moderate, and severe. Mild and moderate were classified as moderate, and severe and extremely severe were classified as severe. The Cronbach's alpha ranged from 0.88 to 0.89.

The Health-Promoting Lifestyle Profile-II (HPLP-II)¹⁶⁾ was used to measure HPLB. A total of 52 items are rated from one (never) to four (routinely), with higher scores in-

Table 1. Demographic, health and work-related characteristics and their relationship to HPLP-II (n=302)

Characteristic	Value	Health promotion (HPLP-II)	t/F/r	P
Sex				
Female	276 (91.4)	2.31±0.36	-0.270	0.787
Male	26 (8.6)	2.29±0.36		
Age, y	36.11±8.16		0.165	0.004
Marital status				
Married	164 (54.3)	2.34±0.37	-1.392	0.165
Else	135 (44.7)	2.28±0.34		
Missing	3 (1.0)			
Education				
≤High school graduate	102 (35.3)	2.27±0.37	1.475	0.141
≥College graduate	187 (64.7)	2.33±0.36		
Monthly household income, 10,000 KRW				
<200 ^a	67 (22.2)	2.22±0.39	4.356	0.005
200-399 ^b	70 (23.2)	2.25±0.36		a<c
400-599 ^c	99 (32.8)	2.39±0.34		
≥600 ^d	36 (11.9)	2.41±0.34		
Missing	30 (9.9)			
Smoking status				
Current smoker ^a	62 (20.5)	2.21±0.37	4.474	0.012
Ex-smoker ^b	27 (8.9)	2.45±0.42		a<b
Non-smoker ^c	209 (69.2)	2.32±0.35		
Missing	4 (1.4)			
Sleep, sufficient				
Yes	80 (26.5)	2.42±0.33	3.093	0.002
No	212 (70.2)	2.27±0.37		
Missing	10 (3.3)			
Perceived health				
Good ^a	36 (11.9)	2.55±0.40	19.221	<0.001
Fair ^b	174 (57.6)	2.34±0.33		a>b>c
Poor ^c	92 (30.5)	2.16±0.34		
Job satisfaction, yes				
Yes	106 (35.1)	2.42±0.35	3.968	<0.001
No	184 (60.9)	2.25±0.36		
Missing	12 (4.0)			

Abbreviations: HPLP-II, Health Promoting Lifestyle Profiles-II; KRW, Korean Won.

dicating more frequent and better practice of health behaviors. The instrument includes six subscales: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management. The HPLP-II scale has been validated in a study of Korean participants.¹⁷⁾ In this study, Cronbach's alpha for the HPLP-II total scale was 0.94, with subscale coefficients as follows: stress management=0.81, interpersonal relationships=0.84, spiritual growth=0.88, nutrition=0.77, physical activity=0.92, and health responsibility=0.92. Participant characteristics included age, gender, marital status, education level, income level, smoking status, perceived health, and job satisfaction.

3. Statistical analyses

Statistical analyses were performed using IBM SPSS ver.22 (IBM Corp., Armonk, NY, USA). Frequencies and percentages were calculated for categorical variables and means±standard deviations for continuous variables. *t*-tests, analysis of variances, and correlations were conducted to identify bivariate relationships among the study variables. Statistical significance was set at $P<0.05$.

RESULTS

Participants' characteristics and related HPLP-II total scores are presented in Table 1. Most of the participants were women (91.4%), and 54.8% were married. The mean age was 36.11 ± 8.16 years and approximately 65% had completed at least a college level of education. Approximately 25% of the participants reported a monthly household income of less than 2,000,000 KRW (approximately \$1,701 USD). Those who were older and had a higher monthly household income reported more frequent and better practice of health-promoting behaviors.

Approximately 21% of the participants were smokers at the time of the survey. Only 27.4% reported that they had sufficient sleep, and approximately 12% felt that their health was good, 57.6% to be fair and 30.5% to be poor. Ex-smokers compared to current smokers, those with sufficient sleep, and a higher level of perceived health reported more frequent and better practice of health-promoting behaviors. Approximately 37% reported being satisfied with their current job.

Table 3. Differences of HPLP-II scores according to DASS (n=302)

Variables	Value	Health promotion (HPLP-II)	Health responsibility	Physical activity	F (P)	Nutrition	Spiritual growth	Interpersonal relationship	F (P)	Stress management	F (P)
Depression											
Normal ^a	95 (31.5)	2.48±0.30	22.49 (<0.001)	2.14±0.60	2.81 (0.062)	2.20±0.61	2.81±0.37	2.85±0.30	8.77 (<0.001)	2.58±0.40	20.45 (<0.001)
Moderate ^b	126 (41.7)	2.29±0.33	2.05±0.55	1.96±0.61	1.96±0.61	2.25±0.44	2.45±0.44	2.68±0.39	a>b,c	2.34±0.40	a>b>c
Severe ^c	81 (26.8)	2.14±0.38	1.92±0.65	1.83±0.59	1.83±0.59	2.16±0.52	2.11±0.50	2.61±0.54	a>b,c	2.19±0.44	a>b>c
Anxiety											
Normal ^a	90 (29.8)	2.42±0.31	2.08±0.56	2.17±0.63	0.81 (0.447)	2.30±0.47	2.63±0.47	2.79±0.35	2.55 (0.080)	2.54±0.41	15.32 (<0.001)
Moderate ^b	92 (30.5)	2.33±0.34	2.08±0.57	1.97±0.57	1.97±0.57	2.23±0.39	2.54±0.46	2.70±0.40	a>c	2.41±0.38	a,b>c
Severe ^c	120 (39.7)	2.22±0.39	1.99±0.65	1.91±0.63	1.91±0.63	2.19±0.52	2.31±0.54	2.66±0.48	a>c	2.22±0.45	a,b>c
Stress											
Normal ^a	124 (41.0)	2.40±0.30	2.05±0.59	2.10±0.58	0.27 (0.767)	2.28±0.44	2.64±0.44	2.81±0.33	6.33 (0.002)	2.51±0.43	11.60 (<0.001)
Moderate ^b	95 (31.5)	2.30±0.36	2.06±0.55	1.99±0.63	1.99±0.63	2.23±0.46	2.47±0.50	2.69±0.43	a>c	2.31±0.38	a>b,c
Severe ^c	83 (27.5)	2.19±0.41	2.00±0.67	1.87±0.64	1.87±0.64	2.17±0.52	2.23±0.53	2.60±0.51	a>c	2.24±0.46	a>b,c

Values are presented as mean±standard deviation or number (%).

Abbreviations: HPLP-II, Health Promoting Lifestyle Profiles-II; DASS, Depression Anxiety Stress Scale.

The results on the mental health status and health-promoting behaviors of the participants are summarized in Table 2. The mean DASS total score was 23.87 ± 13.98 out of a possible total score of 63. Among the subdomains, the mean score for stress was highest (9.22), followed by depression (7.49), and anxiety (7.16). Among the six HPLP-II subscales, interpersonal relations, spiritual growth, and stress management received high scores. Physical Activity had the lowest score.

When compared with normative scores, 68.5%, 70.2%, and 59.0% of the participants were classified as having moderate to severe levels of depression, anxiety, and stress, respectively. The mental health status inversely correlated with the HPLP-II. Those who were classified as normal based on the DASS (depression: $F=22.49$, $P<0.001$; anxiety: $F=8.55$, $P<0.001$; stress: $F=9.06$, $P<0.001$) were more likely to practice health-promoting behaviors.

There were differences found in the relationships between the mental health subdomains and subscales of the HPLP-II (Table 3). Depressive and stress symptoms had a profound impact on physical activity, spiritual growth, interpersonal relationships, and stress management. Anxiety symptoms were significantly related to physical activity, spiritual growth, and stress management.

DISCUSSION

The purpose of this study was to examine call center employees' HPLB and explore the relationships between their mental health status and HPLB. The occupational vulnerability such as poor working conditions, low pay, and a limited career path, emotional labor, and high level of smoking among call center employees were reported.²⁻⁴⁾ Especially, their mental health issues have been concerned and a study reported high levels of depression, anxiety, and stress among them.³⁾ This study fills an important gap in the literature, as there are limited studies available that have explored the relationship between mental health status and HPLB among call center employees.

The mean age of the participants in this study was approximately 36 years, and most of the participants were women (91.4%). These demographic characteristics are similar to those of previous Korean studies on call center employees.^{2,18)} Individuals who were older, had a high household income, sufficient sleep, and good perceived

health were more likely to have HPLB. Moreover, those who willingly engaged in health-promoting behaviors were more likely to have a healthier lifestyle.

The average HPLP-II score among the participants was 2.31, which is lower than the mean score of Korean nurses (2.66),⁸⁾ Korean middle-aged women (2.47), and Japanese university students (2.50).¹⁹⁾ Health-promoting behaviors were related to sustaining or increasing the individual well-being, self-actualization, and personal fulfillment and decreasing the probability of illness.^{5,9)} It seems call center employees necessitate a attention of health care services to promote health-promoting intervention.

The average DASS score was 23.87 ± 13.98 , which is higher than various study samples implying Korean call center employees have mental health issues.³⁾ One study found that the psychological well-being of call center employees was poor,³⁾ which suggests that they have serious mental health issues. Participants with moderate to severe levels of depression reported lower levels on the four HPLP-II subscales assessing physical activity, spiritual growth, interpersonal relationships, and stress management. These trends are consistent with the other mental health indicators (i.e., anxiety and stress). The other HPLP-II subscales that assessed health responsibility and nutrition also showed this tendency, but the results were not statistically significant. This finding suggests that call center employees who are mentally healthy may engage in self-care activities and have knowledge about health-promoting lifestyles. Work characteristics of call center employees, such as low job control, stress, and the emotionally demanding nature of the occupation, may be associated with poor mental health.^{11,20-22)}

Few studies have reported on call center employees' HPLB and mental health status. Consistent with a previous study,²³⁾ the current study showed that health-promoting lifestyles and mental health were negatively correlated for call center employees. A recent study reported the negative relationship between stress-related symptoms and HPLP for health care workers.¹¹⁾ People in jobs with high psychological demands such as nurses and call center employees may experience high levels of stress-related symptoms, which may contribute to not engaging in behaviors that promote a healthy lifestyle.

Among the six health-promoting lifestyle domains, participants' highest scores were in the domains of interpersonal relationships and spiritual growth, and their lowest scores

were in the domains of health responsibility and physical activity. Our results are consistent with previous studies showing interpersonal relationships had higher scores, while health responsibility and physical activities had lower scores.^{8,13,24)} The participants' highest score was in the interpersonal relationships domain, although it is lower compared to previous studies, which may be related to the job culture. Indeed, the hallmark of call center employees' culture is their strong bonding and high support for each other.³⁾ This implies that call center employees may be encouraged to strengthen social support, facilitating their healthy behaviors. The spiritual growth domain received the second highest score, which is consistent with the results of previous studies.^{8,13,19)} Spiritual growth includes goals of individuals, their capacity to improve their health, and to what extent they know and are able to satisfy their needs.⁵⁾ This implies that call center employees have the potential for personal development such as wellness attainment.

This study also showed that participants scored lowest on the physical activity and health responsibility subscales. Health responsibility includes activities such as discussing health concerns, seeking health education, and receiving regular health check-ups. Low levels of health responsibility and physical activity have been shown in studies with diverse populations such as university students,¹⁹⁾ Korean nurses,⁸⁾ nursing students,¹³⁾ and Chinese older adults.¹⁰⁾ Behaviors such as help-seeking and engaging in physical activities are important for health maintenance and improvement. The results of this study indicate that interventions related to knowledge and motivation enhancement aimed at increasing physical activity levels would benefit call center employees. Although a recent study showed that HPLPs with high levels of health responsibility and physical activity were not associated with actual physical activity,¹⁾ call center employees increased awareness of the importance of health-promoting lifestyles and physical activity may contribute to developing a more positive daily lifestyle. The low level of physical activity may be related to work characteristics, particularly a sedentary workplace environment. It is possible that call center employees' physical inactivity is associated with a low level of physical activity at work, suggesting that a physically active environment or conducting programs at work that promote physical activities may have a positive effect on health promotion and disease prevention.

Several limitations must be considered when interpreting

our findings. First, study participants were sampled using a convenience sampling technique using call center employees from a large credit card company through eight outsourced companies. Therefore, generalization of the results may be limited to similar populations. Second, 91.4% of the participants were women. Although women dominate the customer service industry in Korea, these findings cannot be generalized to call centers with male employees. Future studies should investigate mental health status and health-promoting behaviors among call center employees that include larger samples of men and with varying demographic and workplace characteristics. Third, response bias may have affected the results because managers were gatekeepers of the distribution of questionnaires. Some participants may have provided socially desirable responses as a result, especially with regard to the DASS.

There has been concerns about occupational and psychological vulnerability among call center employees. The findings of the present study confirm that call center employees who are mentally healthy tend to practice HPLB when compared to those with moderate to severe mental health issues. The study reveals concerning high level of depressive and stress symptoms, and its profound negative impact on physical activity, spiritual growth, interpersonal relationships, and stress management. As the call center service sector increases, so does the need to improve the physical and mental health of call center employees. There is an imperative need to resolve mental health issues of call center employees, who are at a high risk of health-related issues. Healthcare providers and organizations should closely and routinely monitor depression, anxiety, and stress in Korean call center employees and develop organizational and health-related policies for the Korean call center sector. Additionally, the development and implementation of health-related interventions to promote healthy lifestyle behaviors are critical for call center employees.

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요 약

연구배경: 콜센터 상담사는 높은 직무스트레스와 정신건강

강문제를 경험한다. 본 연구에서는 콜센터 상담사의 정신건강상태와 건강증진생활양식 간의 관계를 살펴보았다.

방법: 본 연구는 콜센터 상담사 302명을 대상으로 한 조사 연구의 2차 자료분석연구이다. 연구 대상자의 정신건강상태와 건강증진생활양식을 조사하기 위해 Depression Anxiety Stress Scale (DASS)와 Health Promoting Lifestyle Profile-II (HPLP-II)를 사용하였다.

결과: 참가자들의 전체 DASS 점수는 63점 만점에 23.87 ± 13.98 점이었다. HPLP-II의 6개의 하위영역 중 대인관계, 영적 성장, 스트레스 관리 부문에서 가장 높았고 신체활동 점수는 가장 낮았다. 높은 수준의 우울, 불안, 스트레스를 보인 참가자들은 신체 활동, 영적 성장, 대인 관계, 스트레스 관리 분야에서 낮은 건강증진생활양식을 보였다.

결론: 현대 산업에서 콜센터 서비스 부문이 증가함에 따라 직원들의 신체적, 정신적 건강 요구를 해결해야 할 필요성이 커지고 있다. 콜센터 상담사의 건강증진을 위해 보건 관리자 및 콜 센터 차원에서 직원의 우울, 불안 및 스트레스 수준을 면밀히 모니터링할 필요가 있다. 또한 건강증진행위를 촉진하기 위해 직무환경을 고려한 건강증진프로그램 개발 및 적용이 필요하다.

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