The Effect of Emotional Labor and Depression on the Quality of Life of Call Center Workers

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ABSTRACT

Purpose: The purpose of this study is to examine the impact of emotional labor and depression among call center workers on their quality of life.

Methods: The survey was conducted from March 28th to April 8th, 2023, and the study participants were 170 call center workers from K Telecommunications located in S city in South Korea. Descriptive statistical analysis was used to examine the general characteristics of the participants. Differences in emotional labor, depression, and quality of life based on the participants' general characteristics were analyzed using t-tests and ANOVA. The correlation between emotional labor, depression, and quality of life was examined using Pearson's correlation coefficient analysis. Factors influencing quality of life were determined using multiple regression analysis.

Results: According to the research findings, there was a significant negative correlation between quality of life and emotional labor (r=-.35, p<.001) as well as depression (r=-.53, p<.001). Factors influencing the participants' quality of life were identified as emotional labor (t=-.08, p=.003), depression (t=-7.93, p<.001), cohabiting family (t=.77, p=.030), and average monthly income (t=1.31, p=.010) (F=17.15, p<.001).

Conclusions: Therefore, in order to enhance the quality of life for call center workers, it is necessary for workplaces to implement management measures addressing emotional labor and depression. Furthermore, concerted efforts and agreements between labor and management are required to improve social support for workers and enhance working conditions.

Keywords: *Emotional labor, Depression, Quality of life, Call center Workers*

INTRODUCTION

As the industrial structure in South Korea has shifted towards a service-oriented economy, the number of workers engaged in customer service tasks has been increasing. As of 2019, there were 7.034 million individuals working in customer service, accounting for 35.1% of the total wage workers (20.045 million) (Ministry of Employment and Labor, 2019). Emotional labor is a concept initially proposed by the American sociologist Hochschild (Hochschild, 2012). She defines emotional labor as "the labor of managing emotions, such as maintaining appearance and facial expressions to create a sense that consumers are receiving friendly and caring treatment, suppressing one's true feelings, or expressing different emotions from one's actual emotions (Hochschild, 2012).

In Korea, the Emotional Labor Protection Act has been enforced since 2018 to protect workers who directly interact with customers or handle customer-related tasks via information and communication networks (Occupational Safety and Health Act, 2023).

The increase in emotional labor is associated with an increased risk factor for workers' mental health, and this categorizes workers engaged in emotional labor as a high-risk group for mental health issues (Kim et al., 2022). Call center workers, as representative customer service workers, experience emotional labor in their interactions with customers, which can lead to job burnout and various mental health issues such as anxiety and depression (Cho, 2021). It has been reported that 8 out of 10 call center workers are categorized as being at risk of depression (Kim, 2021). According to prior research, job environment, organizational support, and organizational commitment have been found to have a positive impact on the quality of life of call center workers (Baek & Cho, 2018). On the other hand, mental health issues such as depression, insomnia, and anxiety have

been shown to have a negative impact on the quality of life (Baek & Cho, 2018). Furthermore, emotional labor has been identified as a factor that negatively affects the work-life balance and well-being of call center workers (Kim et al., 2022). Therefore, this study aims to investigate the impact of emotional labor and depression among call center workers on their quality of life, providing fundamental data for improving the work environment and promoting workplace health programs.
The specific objectives of this study are as follows:
First, to understand the general characteristics of the participants.
Second, to assess the levels of emotional labor, depression, and quality of life among the participants.
Third, to examine the differences in emotional labor, depression, and quality of life based on the participants' general characteristics.
Fourth, to explore the correlations between emotional labor, depression, and quality of life among the participants.
Fifth, to identify the factors influencing the quality of life of the participants.

RESEARCH METHODS

Research Design

This study is a descriptive survey conducted to examine the impact of emotional labor and depression among call center workers on their quality of life.

Study Population

*This study collected data from workers employed at the call center of K Telecommunications, located in S city in Korea, through a designed questionnaire. Data collection was carried out only from respondents who signed the research consent form. A total of 175 workers responded to the survey, and data from 170 participants who responded diligently were used for analysis. The sample size was determined using the G*Power 3.1.9.7 software. For regression analysis, a significance level (α) of .05, a power (1-β) of 90%, and a medium effect size of .15 were applied. Considering four predictor variables including the independent and dependent variables, it was calculated that a sample size of 150 participants was required. Therefore, the sample size of 170 participants in this study was deemed appropriate.*

Measures Ethical Considerations and Data Collection Method

The independent variable of this study is the utilization of medical service according to the presence or absence of COVID-19. The data collection was conducted from March 28th to April 8th, 2023. The participants were provided with an explanation of the purpose and utilization of the research on the cover page of the survey. The process of data collection emphasized that the survey results would be strictly confidential and would be securely discarded after use. In order to ensure research ethics, the survey was designed in a way that participants would first read and sign a research consent form before proceeding to the questionnaire section. The survey was carefully designed to exclude any personally identifiable information. Additionally, participants were offered a token of appreciation upon completion of the research survey.

Definition of Variables

2.4.1. General Characteristics

The general characteristics of the study participants were constructed through a questionnaire based on interviews with five workers who visited the workplace and consultation with one occupational health manager. The general characteristics were composed of a total of nine items, including age, gender, education level, cohabiting family, marital status, position, business department, working duration, and average monthly income.

2.4.2. Emotional Labor

The survey on emotional labor utilized the Korean Emotional Labor Scale (KELS), a Korean version of the emotional labor assessment tool. It consisted of a total of 24 items measured on a 4-point scale. The scale included five subscales: "demand and regulation of emotion" (5 items), "overload and conflict in customer service" (3 items), "emotional dissonance and impairment" (6 items), "organizational surveillance and monitoring" (3 items), and "organizational support and protection system" (7 items) (Chang, 2014). A higher

score indicates a higher level of emotional labor, and 7 items among the 24 were reverse-scored. The score for emotional labor was calculated using the formula provided below.
** Area-specific standardized score = (Actual score - Number of items) × 100 / (Maximum possible score - Number of items)*
** Total score for emotional labor = Sum of standardized scores for each area / 5*
In terms of the tool's reliability, Cronbach's alpha values reported by Chang's study (2014) was as follows: 'demand and regulation of emotion' 0.795, 'overload and conflict in customer service' 0.864, 'emotional dissonance and impairment' 0.904, 'organizational surveillance and monitoring' 0.761, and 'organizational support and protection system' 0.812 (Chang, 2014). In this study, Cronbach's alpha values were as follows: 'demand and regulation of emotion' 0.754, 'overload and conflict in customer service' 0.721, 'emotional dissonance and impairment' 0.697, 'organizational surveillance and monitoring' 0.732, and 'organizational support and protection system' 0.852.

2.4.3. Depression

Depression was assessed using the adapted version of the Patient Health Questionnaire-9 (PHQ-9) (Choi et. al., 2007) developed by Spitzer & Kroenke (1999) and utilized by Choi et al. It was measured on a Likert 4-point scale ranging from 0 to 3. A total score of 10 or higher was considered as a positive indication of depression. In the study by Choi et al., the Cronbach's alpha value was reported as 0.85 (Choi et. al., 2007). In this study, the Cronbach's alpha value for depression was 0.80.

2.4.4. Quality of Life

The survey tool used to measure quality of life was the Korean version of the World Health Organization Quality of Life assessment instrument (WHOQOL), developed by the World Health Organization. It was translated into Korean by Min et al., and the validity and reliability of the tool were verified (Min et. al., 2000).
The instrument consisted of a total of 26 items, including 7 items in the physical domain, 6 items in the psychological domain, 3 items in the social relationship's domain, 8 items in the environmental domain, and 2 items related to overall perception. It utilized a 5-point Likert scale, where higher scores indicated better quality of life. In the study by Min et al., the Cronbach's alpha value at the time of tool development was 0.89 (Min et. al., 2000). In this study, the Cronbach's alpha value was 0.85.

DATA ANALYSIS

The data analysis was performed using the SPSS 23.0 program. Frequency analysis was used to analyze the general characteristics of the participants and the levels of emotional labor, depression, and quality of life. The differences in emotional labor, depression, and quality of life according to the participants' general characteristics were analyzed using t-tests and ANOVA, and post hoc tests were conducted using the Scheffe method. The relationship between emotional labor, depression, and quality of life was examined using Pearson's correlation coefficient. Multiple regression analysis was employed to identify the factors influencing the participants' quality of life.

RESULTS

General Characteristics of Subjects

The average age of the participants was 41.01 ± 8.08 years, with 105 females (61.80%) and 65 males (38.20%). In terms of education level, there were 69 high school graduate (40.60%), 54 college graduate (31.80%), and 47 university graduate (27.60%). In terms of the number of family members living together, there were 67 participants (39.40%) with 1-2 members, 61 participants (35.90%) with 3-4 members, 37 participants (21.80%) with no family members, and 5 participants (2.90%) with 5 or more members. In terms of marital status, there were 92 participants (54.10%) who were single, 68 participants (40.00%) who were married, and 10 participants (5.90%) who responded as other. In terms of position, there were 152 employees (89.40%), 13 team leaders (7.60%), and 5 managers (2.90%). In terms of business part, there were 92 participants (54.10%) in outbound and 78 participants (45.90%) in inbound. Regarding the working duration, there were 71 participants (41.80%) with more than 10 years, 49 participants (28.80%) with less than 1~3 years, 43 participants (25.30%) with more than 5~10 years, and 7 participants (4.10%) with less than 3~5 years. Furthermore, in terms of monthly income, there were 135 participants (79.40%) earning 3 million

won or less, 29 participants (17.10%) earning 2 million won or less, and 6 participants (3.50%) earning 4 million won or less (Table 1).

Table 1: General characteristics of subjects

(*N*=170)		
Variables	**Categories**	**N(%) or M±SD**
Age(year)		41.01±8.08
Gender	Male	65(38.20)
	Female	105(61.80)
Education	≤High school graduate	69(40.60)
	College graduate	54(31.80)
	≥University graduate	47(27.60)
Cohabiting family (Person)	None	37(21.80)
	1~2	67(39.40)
	3~4	61(35.90)
	≥5	5(2.90)
Marital status	Single	92(54.10)
	Married	68(40.00)
	Other	10(5.90)
Position	Employee	152(89.40)
	Team leader	13(7.60)
	Manager	5(2.90)
Business part	Inbound	78(45.90)
	Outbound	92(54.10)
Working duration (years)	1≤ <3	49(28.80)
	3≤ <5	7(4.10)
	5≤ <10	43(25.30)
	≥10	71(41.80)
Monthly income (won)	≤2,000,000	29(17.10)
	2,000,001≤ ≤3,000,000	135(79.40)
	3,000,001≤ ≤4,000,000	6(3.50)

The Level of Emotional Labor, Depression, and Quality of Life of the Subject

The level of emotional labor among the participants was 59.70 points, the level of depression was 5.31 points, and the quality of life was 3.25 points (Table 2).

Table 2: The level of emotional labor, depression and quality of life of the subject

Variables	M±SD	Min	Max
Emotional labor	59.70±17.00	22	100
Depression	5.31±4.25	0	19
Quality of life	3.25±3.19	2	5

Differences in Emotional Labor, Depression, and Quality of Life According to General Characteristics

The independent variable was the presence or absence of COVID-19. The difference in emotional labor based on the participants' general characteristics showed that females (62.03±13.96) had higher scores compared to males (58.26±18.55), with a significant difference (t=9.20, p=.003). Furthermore, in terms of cohabitation, there were significant differences in emotional labor scores based on the presence of cohabitating family members. Participants without cohabitating family members (63.97±17.22) had higher scores compared to those with 1-2 cohabitating family members (57.96±16.45), 3-4 cohabitating family members (57.16±16.36), and 5 or more cohabitating family members (49.61±19.44) (F=2.44, p=.044).
Regarding the difference in depression according to participants' general characteristics, females (5.96±4.75) showed higher scores compared to males (4.26±3.02), indicating a significant difference (F=14.71, p=.000). Additionally, in terms of cohabitation, participants without cohabitating family members (6.81±5.03) had higher

scores compared to those with 1-2 cohabitating family members (5.53±4.06), 3-4 cohabitating family members (4.39±3.77), and 5 or more cohabitating family members (3.80±3.63), showing a significant difference (F=2.79, p=.042). Additionally, in terms of monthly income, significant differences in depression scores were observed among workers with different income levels. Participants with an income of 200 million won or less (7.80±3.63) had higher scores compared to those with an income of 300 million won or less (5.37±4.33) and 400 million won or less (4.48±5.07) (F=1.20, p=.031).

The differences in quality of life among the participants according to their general characteristics were observed. Regarding the number of cohabiting family members, higher scores were found in the group with 5 or more family members (3.45±0.69), followed by the group with 3-4 members (3.33±0.57), the group with 1-2 members (3.22±0.51), and the group without family members (3.10±0.48) (F=1.20, p=.029). Additionally, in terms of monthly income, differences in quality of life scores were found among workers with an income of 400 million won or less (3.26±0.56), 300 million won or less (3.17±0.42), and 200 million won or less (3.07±0.20) (F=1.09, p=.030).

Table 3: Differences in emotional labor, depression, and quality of life according to general characteristics

Variables	Emotional labor		Depression		Quality of life	
	M±SD	t or F(*p*)	M±SD	t or F(*p*)	M±SD	t or F(*p*)
Gender						
Male	58.26±18.55	9.20 (.003)	4.26±3.02	14.71 (.000)	3.31±0.55	1.00 (.992)
Female	62.03±13.96		5.96±4.75		3.21±0.53	
Education						
≤High school graduate	59.26±16.41	.30 (.735)	5.10±4.39	.81 (.445)	3.20±0.51	.49 (.611)
College graduate	61.96±18.76		5.69±4.24		3.20±0.60	
≥University graduate	57.73±15.72		5.19±4.10		3.23±0.50	
Cohabiting family						
None	63.97±17.22[a]	2.44 (.044) a>b>c	6.81±5.03[a]	2.79 (.042) a>b>c	3.10±0.48[a]	1.25 (.029) a<b
1~2	57.96±16.45[b]		5.53±4.06[b]		3.22±0.51[a]	
3~4	57.16±16.36[b]		4.39±3.77[c]		3.33±0.57[a]	
≥5	49.61±19.44[c]		3.80±3.63[c]		3.45±0.69[b]	
Marital status						
Single	59.91±13.96	.97 (.379)	6.03±4.40	2.96 (.054)	3.18±0.51	2.33 (.100)
Married	60.47±19.77		4.43±3.91		3.36±0.54	
Other	52.49±21.92		4.70±4.19		3.18±0.68	
Position						
Employee	60.20±16.94	.75 (.473)	5.23±4.19	.61 (.540)	3.26±0.54	.82 (.439)
Team Leader	55.22±19.		6.62±4.97		3.29±0.50	

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Manager	56.20±12.45		4.40±4.39		2.95±0.50	
Business part						
Inbound	60.04±16.19	.26 (.610)	5.56±4.31	.19 (.660)	3.26±0.55	.35 (.550)
Outbound	59.76±17.50		5.05±4.21		3.24±0.53	
Working duration (years)						
1≤ <3	59.26±15.69	.30 (.822)	4.49±3.48	2.00 (.115)	3.37±0.56	1.40 (.244)
3≤ <5	54.65±14.72		7.14±4.77		3.07±0.49	
5≤ <10	19.34±14.92		6.35±4.80		3.17±0.50	
≥10	60.72±19.30		5.07±4.24		3.23±0.54	
Monthly income (won)						
≤2,000,000	62.78±18.59	1.87 (.053)	7.80±3.63[a]	1.20 (.031) a>b	3.07±0.20[a]	1.09 (.030) a<b
2,000,001≤ ≤3,000,000	59.56±16.47		5.37±4.33[b]		3.17±0.42[b]	
3,000,001≤ ≤4,000,000	59.07±14.00		4.48±5.07[b]		3.26±0.56[b]	
* a,b: Scheffé's test						

Correlation between Emotional Labor, Depression and Quality of Life

The quality of life of the participants had a significant negative correlation with emotional labor (r=-.35, p<.001) and a significant negative correlation with depression (r=-.53, p<.001). Furthermore, emotional labor was positively correlated with depression (r=.33, p<.001) among the participants (Table 4).

Table 4: Correlation between emotional labor, depression and quality of life

Variables	Emotional labor	Depression	Quality of life
	r(ρ)	r(ρ)	r(ρ)
Emotional labor	1		
Depression	.33(<.001)	1	
Quality of life	-.35(<.001)	-.53(<.001)	1

Factors Influencing Quality of Life of Subjects

To identify the factors influencing the participants' quality of life, the independent variables included family composition, monthly income, emotional labor, and depression, while the dependent variable was the quality of life. Multiple regression analysis was conducted to examine the relationship. In the analysis results, the tolerance values were all above 0.8, indicating that they exceeded the threshold of 0.1. Additionally, the Variance Inflation Factor (VIF) values were all below 10, indicating the absence of multicollinearity issues. The Durbin-Watson value was 1.535, indicating that the errors were independent and there was no autocorrelation. The factors influencing the quality of life were found to be the participants' emotional labor (t=-0.08, p=.003), depression (t=-7.93, p<.001), Cohabiting family (t=0.77, p=.030), and monthly income (t=1.31, p=.010) (F=17.15, p=<.001) (Table 5).

Table 5: Factors influencing quality of life of subjects

Variables	Quality of life					
	B	SE	β	t	*p*	VIF
(Constant)	3.34	0.24		13.53	.000	
Emotional labor	-0.01	0.02	-0.06	-0.08	.003	1.029
Depression	-0.06	0.01	-0.53	-7.93	.000	1.059
Cohabiting Family	0.03	0.04	0.05	0.77	.030	1.097
Monthly Income(won)	0.10	0.08	0.08	1.31	.010	1.075
R^2=.294, Adj.R^2=.277, F=17.15, p<.001, Durbin-Watson=1.941						

DISCUSSION

In order to understand the impact of emotional labor and depression among call center workers on their quality of life, this study was conducted to provide foundational data for improving the work environment for employees and implementing workplace health promotion programs. The following are the findings from the study's discussion.

In regard to the differences in emotional labor based on the general characteristics of the subjects, it was found that women scored higher in emotional labor compared to men. This result aligns with the findings from a previous study (Kim et al., 2020) on emotional labor among male and female call center workers, where women also scored higher in emotional labor compared to men. This can be understood as a result from a study (Lee et al., 2020) that compared face-to-face communication with phone communication, where women are more exposed to verbal abuse and experience greater emotional dissonance, leading to higher emotional labor scores than men. Additionally, when comparing workers with few cohabiting family members to those with many, it was observed that the latter group had lower emotional labor scores. This can be inferred to be consistent with previous research (Lee & Yoon, 2016) indicating that social support, particularly support from colleagues at the workplace, plays a moderating role in the relationship between emotional labor and depression among emotional labor workers.

Regarding the differences in depression based on the general characteristics of the subjects, it was found that women, those with fewer cohabiting family members, and those with lower monthly incomes showed higher levels of depression compared to men. Previous studies have consistently reported that, on average, women tend to have higher levels of depression than men (Gatz et al., 1996; Zunzunegui et al., 1998; Lee & Sohn, 2005; Jeon & Kahng, 2008; Kahng & Kwon, 2008; Shin, 2010; Yang, 2023), and the sociodemographic differences among the subjects are exacerbating the inequality in depression (Kahng, et al, 2015). The reason for higher levels of depression among women can be attributed to a higher likelihood of experiencing situations related to depression compared to men (gender-specific differences in exposure to certain circumstances), as well as psychological vulnerability to adversity and coping skills, which differ between women and men (Kahng, et al, 2015). Furthermore, the study demonstrated consistent results with previous research by Kang et al., that showed a higher level of depression as income or economic instability increases, and with studies (Ahn, 2007; Kahng, et al, 2015; Song, 2016; Dao et al., 2018; Lee, 2018; Kang & Lee, 2020; Kang & Kim, 2021) suggesting that the risk of depression-inducing factors such as income reduction and bereavement increases during middle age. In other words, economic difficulties are a contributing factor to the elevated levels of depression.

Regarding the differences in quality of life based on the general characteristics of the subjects, it was found that a higher number of cohabiting family members and higher monthly income were associated with higher levels of quality of life. The impact of cohabiting family size was mainly influenced by the presence of a spouse, indicating that the emotional well-being associated with having a spouse played a significant role in this result. Additionally, income and financial assets showed a meaningful influence on life satisfaction, consistent with previous research (Kim & Kang, 2012; Jung & Kim, 2019; Park & Park, 2023). Considering that the average age of the subjects in this study falls within the middle-age range, it is suggested that there may be a sense of responsibility to prepare for and anticipate the challenges of later adulthood and old age.

As South Korea's industrial structure shifts towards a service-oriented economy, the field of emotional labor within the service sector demands a high level of specialization. Considering this, during customer interactions, service workers experience various forms of conflict and tension. Such emotional strain and dissonance can lead to negative health effects, such as depression (Jeong, 2023). In other words, this can result in decreased quality of life, increased stress, and mental health issues. In this study, the factors influencing the quality of life of call center workers were identified through regression analysis. These factors include emotional labor, depression, the number of cohabiting family members, and monthly income of the subjects. Specifically, higher

levels of quality of life were associated with lower levels of emotional labor and depression, as well as having a larger number of cohabiting family members and higher monthly income. Additionally, a positive correlation was found between emotional labor and depression. This suggests that if workers do not experience emotional dissonance despite facing emotional demands and overload from customers, the negative impact on mental health can be reduced (Kim et al., 2019). Therefore, specialized counseling and healing programs to prevent emotional labor are necessary, and organizations need to develop systematic solutions for this. Furthermore, considering that workers' income levels have an impact on their quality of life and that this varies across different age groups, employers' attention is required to address low-wage issues. Additionally, there is a need for appropriate program development for organization members to address the potential negative impact on workers' quality of life due to factors such as changes in family roles and economic issues.

CONCLUSIONS

The results of this study showed that the factors influencing workers' quality of life were emotional labor, depression, the number of cohabiting family members, and monthly income.

As for the limitations of the research, firstly, since it focused on a single workplace rather than conducting a comprehensive survey of call centers, further studies that include comprehensive workplace surveys are needed to complement the results. Secondly, considering the differences in emotional labor and depression based on gender, there is a need for research that compares variables between men and women. Thirdly, it is also suggested to conduct follow-up studies on the moderating effects of social support, such as family, supervisors, and colleagues, on emotional labor and depression.

In conclusion, in order to improve the quality of life of call center workers, it is necessary for workplaces to conduct comprehensive surveys on emotional labor, depression, and stress. Based on the results, there is a need for specialized counseling and healing programs for workers who may experience mental health issues. Additionally, addressing the low-wage issue, which can have an impact on mental health, requires collaborative efforts between labor and management to establish reasonable wage levels.

ACKNOWLEDGEMENTS

This research was not supported by any funding or grant.

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