



COVID-19 and Women's Health: A Panel Survey on the Perceptions of Family Caregiving among Middle-aged Korean Women



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Abstract:

Background: COVID-19 has significantly impacted society, economy, and health, altering family roles and caregiving concepts. Middle-aged women bear the responsibility of managing family health, educating children, and caring for the elderly. The pandemic has brought considerable changes to these roles. This study used data from the Korean Longitudinal Survey of Women and Families (KLoWF).

Objective: This study identifies factors that influence the perceptions of family caregiving among middle-aged Korean women during the COVID-19 pandemic.

Methods: Data from the 8th wave of the Korean Longitudinal Survey of Women & Families (KLoWF) for the year 2020, provided by the Korean Women's Development Institute, was used. The samples consisted of 1,120 middle-aged women between the ages of 45 and 65. Variables included general characteristics, changes in women's lives due to COVID-19, family roles, and perceptions of family caregiving. The data were analyzed using t-tests, ANOVA, post-hoc analysis with Scheffé's test, Pearson correlation to examine relationships between variables, and hierarchical regression to identify factors influencing perceptions of family caregiving.

Results: The hierarchical regression model indicated that the factors influencing the perceptions of family caregiving among middle-aged women were age, changes in women's lives due to the pandemic, and family roles, with an explanatory power of 24.7%.

Conclusion: This study revealed changes in the patterns of family and caregiving roles among Korean middle-aged women during the COVID-19 era, providing foundational data for future studies on the life perceptions of Korean middle-aged women, proactive health management practices among women, and the development of sociodemographic policies.

Keywords: COVID-19, Middle-aged women, Family role, Caregiving, Korean women, Pandemic.

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1. INTRODUCTION

Due to the spread of COVID-19, various aspects of family life have been altered, and caregiving at the family level has been restructured through national interventions such as social distancing and voluntary self-quarantine [1, 2]. Particularly, the average time female workers spent on

family caregiving increased from 43.7 hours per week prior to the pandemic to 63 hours [3]. Additionally, a survey conducted across 25 OECD member countries revealed that responsibilities for domestic chores, childcare, education, and disease prevention are predominantly assigned to women and that the

unemployment rate among women with children under the age of two is higher than that of men [4]. These unemployment statistics demonstrate that despite COVID-19 being a contagious disease, women are prioritizing the health and care of their families over their own health [2].

According to prior research, South Korea has been significantly influenced by traditional familialism compared to other countries, resulting in family caregiving being strictly perceived as the role of women in the past [5]. The burden of family caregiving has been found to lead to physical health deterioration, depression, anxiety, and stress [6]. These issues have degraded the quality of life for women and led to self-neglect, preventing women from adequately managing their own health [7, 8]. Over time, the social status of women has been elevated due to increased educational opportunities and socioeconomic activities. The perceptions of family caregiving have been expanded from traditional norms, becoming a crucial element in establishing a culture of gender equality within the family [9].

Among all generations, family caregiving is perceived most strongly by middle-aged individuals [10]. Middle age is identified as a developmental stage in a person's lifespan, serving as a transitional period during which individuals enter a new phase [11]. Mental health difficulties may also be experienced by individuals due to physical changes caused by menopausal symptoms, changes in their roles as they become parents to adult children, and the illness and death of close acquaintances [12]. Meanwhile, new challenges in family caregiving are being accompanied by social changes such as the increase in youth unemployment and the delay in marriages among adults, particularly impacting middle-aged women [5, 13]. Due to social changes, many adult children have been unable to become independent and continue living with their parents, leading to ongoing economic and caregiving responsibilities being shouldered by the parents [14]. Consequently, parents have been faced with the situation of caring not only for their children but also for their grandchildren. This has led to complex burdens of economic and caregiving responsibilities, which have also impacted the health management of middle-aged women [15, 16].

This study used data from the Korean Longitudinal Survey of Women and Families (KLoWF). The KLoWF is a national-level panel survey that has been conducted biennially since 2007 with a sample of 9,997 women aged 19–64 in 9,068 households nationwide. A panel survey is a survey that repeatedly collects data from the same subjects, generating long-term data that enables dynamic analysis that considers individual differences and changes over time [17]. Using data from the 8th KLoWF conducted in 2020, this study identified the difficulties faced by middle-aged Korean women because of COVID-19, their perceptions of changes in their lives due to COVID-19, and their perceptions of family roles, and examines how they affect women's perceptions of family caregiving. The 8th KLoWF included a domain called "Changes in Family and

Women's Lives Due to the COVID-19 Pandemic," which recorded middle-aged women's perceptions of family care during the pandemic.

Understanding the changes in women's health and caregiving responsibilities during the COVID-19 era is crucial for developing future health response strategies. Accordingly, KLoWF added variables related to family roles in the COVID-19 era and changes in women's lives during this period. By identifying the challenges faced during the COVID-19 era, it is possible to offer comprehensive and customized responses for various groups of middle-aged women and to understand and analyze the extensive and diverse impacts of the pandemic on women's lives. Thus far, no research has examined perceptions of family care during the COVID-19 pandemic using Korean national-level data. Thus far, no research has examined perceptions of family care during the COVID-19 pandemic using Korean national-level data.

Research on the factors influencing the perceptions of family caregiving among middle-aged Korean women during a pandemic can help elucidate how the roles of women in families, family caregiving patterns, and household gender roles have changed. This could aid in understanding middle-aged women and devising ways to manage high levels of stress and maintain health as caregivers. Furthermore, it can contribute to effectively coordinating the division of roles and support systems among family members in emergency situations.

2. MATERIALS AND METHODS

2.1. Aim

The study aims to explore the impact of the COVID-19 pandemic on the perceptions and responsibilities of family caregiving among middle-aged Korean women. It investigates how the pandemic has reshaped the roles of these women within their families, particularly in terms of caregiving duties, and how these changes influence their health and well-being.

2.2. Study Design

This study is a correlational study designed to analyze the effects on the perceptions of family care among middle-aged Korean women, using data obtained from the 8th KLoWF.

2.3. Samples and Data Collection

This study was conducted using data from the 8th wave of the Korean Longitudinal Survey of Women & Families (KLoWF), provided by the Korean Women's Development Institute. The Women & Families Panel surveys information on families, family structure, and employment careers. This study utilized a dataset of 1,120 middle-aged women aged 45 to 65 from the 8th wave of the Women and Family Panel survey conducted in 2020.

2.4. Variables

The questionnaire items of the Korean Longitudinal Survey of Women & Families (KLoWF) were developed based on scientific validity and reliability through a

consultation process involving experts, scholars, and policymakers in the field.

2.4.1. General Characteristics

General characteristics were selected, such as age, education level, employment status, marital status, husband's employment status, number of children, whether financial help was provided to the children, and whether financial help was received from the children.

2.4.2. Changes in Women's Lives due to the COVID-19

The survey comprised of a total of 8 items regarding changes in women's lives due to COVID-19. The items include: 1) Increased fear about the future, 2) Increased distrust towards those around, 3) Increased tendency to rely on oneself, 4) Increased awareness of cleanliness and health, 5) Increased fear of illness, 6) Increased dependency on family, 7) Increased need to adhere to social norms, and 8) Increased awareness of preserving the natural ecosystem. Each item is rated on a 5-point Likert scale, with 1 being 'Not at all', 2 'Disagree', 3 'No change', 4 'Somewhat agree', and 5 'Strongly agree'.

2.4.3. Family Roles

Family roles refer to perceptions about whether individuals have equal rights and share roles equally within the family [18]. There were eight items: 1) It is ideal for men to have a job and for women to take care of the family, 2) Women must also have a job to become equals in marriage, 3) Being a working mother of a preschool child has a negative impact on the child, 4) Dual-income couples should share the housework equally, 5) Even married couples should manage finances separately, 6) A couple should have a joint tenancy for a house they share, 7) Fathers have the same responsibility to take care of their children as mothers, and 8) Women have the same responsibility as men to take care of the family. Each item was rated on a 4-point Likert scale with the following options: "Strongly agree" (1 point), "Agree" (2 points), "Disagree" (3 points), and "Strongly disagree" (4 points).

2.4.4. Perceptions of Family Caregiving

This study selected perceptions of family caregiving as the dependent variable. Perceptions of family caregiving comprise how an individual or society perceives the responsibilities and duties family members have in caring for each other. Respondents answer four items: 1) Parents should pay for their children's college tuition, 2) Parents should pay for their children's wedding, 3) Parents should help their adult children with financial difficulties, and 4) Children should live with their elderly parents. Each item was rated on a 4-point Likert scale with the following options: "Strongly agree" (1 point), "Agree" (2 points), "Disagree" (3 points), and "Strongly disagree" (4 points).

2.5. Data Analysis

The collected data were analyzed using IBM SPSS ver. 22.0 (IBM Corp., Armonk, NY, USA). First, the respon-

dents' general characteristics were analyzed using real numbers, percentages, means, and standard deviations (SD). Differences in perceptions of family caregiving according to the respondents' general characteristics were analyzed using an independent t-test and one-way analysis of variance (ANOVA). Post-hoc analysis was performed using the Scheffé test. Second, changes in women's lives due to COVID-19, family roles, and perceptions of family care were analyzed using means and SD. Thereafter, Pearson correlation was used to identify the correlations between changes in women's lives due to COVID-19, family roles, and perceptions of family caregiving. Finally, hierarchical analysis was used to identify the factors affecting perceptions of family care.

3. RESULTS

3.1. Differences in Perceptions of Family Caregiving according to the Respondent's General Characteristics

The general characteristics of the participants were as follows: age ranged from 45 to 65 years (mean 51.85 ± 4.88), 60.2% had a bachelor's degree, 62.1% were employed, marital status showed 6.3% unmarried, 87.5% married, and 6.2% divorced. Among those applicable, 78.6% of the spouses were employed, and 79.5% had children. Regarding financial support to children, 57.2% provided support, while 87.8% did not receive financial support from their children. Differences in perceptions of family support according to the general characteristics of the participants were as follows: those aged between 50 and 59 showed significantly higher perceptions of family support than those aged 60 to 65 ($F=3.48$, $p=.031$), married participants had significantly higher perceptions than unmarried ones ($F=8.84$, $p=.001$), and those providing financial support to their children had significantly higher perceptions than those who did not ($F=7.56$, $p=.001$) (Table 1).

3.2. Changes in Women's Lives due to COVID-19, Family Roles, and Perceptions of Family Caregiving

The participants' perceptions of changes in women's lives due to COVID-19 averaged 4.05 ± 0.55 out of a 5-point scale. Perceptions of roles within the family averaged 2.23 ± 0.32 out of a 4-point scale, and perceptions of family caregiving averaged 2.32 ± 0.30 out of a 4-point scale (Table 2).

3.3. Correlation between Changes in Women's Lives due to COVID-19, Family Roles, and Perceptions of Family Caregiving

The participants' perceptions of family caregiving and changes in women's lives due to COVID-19 showed a statistically significant negative correlation ($r=-.20$, $p<.001$), while family roles showed a statistically significant positive correlation ($r=.22$, $p<.001$). In other words, the higher the perceived changes in women's lives due to COVID-19, the lower the perceptions of family caregiving, and the higher the perceptions of roles within the family, the higher the perceptions of family caregiving (Table 3).

Table 1. Differences in perceptions of family caregiving according to the respondent’s general characteristic (N=1,120).

Variables	Categories	n(%)	Categories	Perception of Family Caregiving			
			(mean±SD)	(mean±SD)	t or F	p	Scheffé
Age (year)	45-49	434(38.8)	51.85±4.88	9.42±1.67	3.48	.031	b>c
	50-59	603(53.8)		9.17±1.68	-	-	-
	60-65	83(7.4)		9.04±1.75	-	-	-
Education level	<High school	470(42.0)	1.72±0.56	9.33±0.15	0.74	.477	-
	Associate’s ^a	380(34.0)	-	9.45±0.49	-	-	-
	Bachelor’s ^b	204(18.2)	-	9.12±0.14	-	-	-
	≤Master’s ^c	66(5.8)	-	9.08±0.17	-	-	-
Occupation	Employed	696(62.1)	1.38±0.48	9.23±0.15	0.46	.498	a<b
	Unemployed	424(37.9)	-	9.25±0.16	-	-	-
Marital state	Not Married	70(6.3)	2.01±0.65	9.18±1.67	8.84	.001	-
	Married	981(87.5)	-	9.19±1.73	-	-	-
	Divorce	69(6.2)	-	9.57±1.61	-	-	-
Husband Job	Yes	880(78.6)	0.97±0.48	9.12±1.64	0.91	.420	-
	No	139(12.4)		9.65±1.76			
	N/A	101(9.0)		10.06±1.66			
Child status	Yes	890(79.5)	1.08±0.45	9.12±1.64	1.09	.211	-
	No	162(14.5)	-	9.65±1.76	-	-	a>b
	N/A	68(6.0)	-	10.06±1.75	-	-	-
Financial support for your child.	Yes	641(57.2)	1.30±0.58	9.96±1.04	7.56	.001	-
	No	408(36.4)	-	9.14±1.55	-	-	-
	N/A	71(6.4)	-	9.25±1.11	-	-	-
Financial help for your child	Yes	66(5.9)	1.81±0.58	9.44±1.01	0.88	.387	-
	No	983(87.8)		9.17±1.75			
	N/A	71(6.3)		9.47±2.01			

Table 2. Changes in women’s lives due to COVID-19, family roles, and perceptions of family caregiving (N=1,120).

Variables	Range	Min	Max	M±SD
Changes in women’s lives due to the COVID-19	1-5	1.00	5.00	4.05±0.55
Family roles	1-4	1.00	3.25	2.23±0.32
Perceptions of family caregiving	1-4	1.00	4.00	2.32±0.30

Note: ‡M±SD=mean±standard deviation.

Table 3. Relationships among changes in women's lives due to COVID-19, family roles, and Perceptions of family caregiving. (N=1,120).

Variable	r (p)		
	Changes in Women’s Lives due to the COVID-19	Family Roles	Perceptions of Family Caregiving
Changes in women’s lives due to the COVID-19	1	-	-
Family roles	-.04(.167)	1	-
Perceptions of family caregiving	-.20(<.001)	.22(<.001)	1

3.4. Factors Affecting Perceptions of Family Caregiving

The results of the hierarchical multiple regression analysis conducted to identify the factors affecting participants' perceptions of family caregiving are as

follows (Table 4). In the first stage, when age, marital status, and whether financial assistance was provided to children, variables that showed significant differences among general characteristics were inputted, the regression model was significant (F=10.76, p<.001), and

Table 4. Factors affecting perception of family caregiving (N=1,120).

Variables	Model 1				Model 2			
	B	β	t	p	B	β	t	p
Age(year)								
45-49	-.051	-.07	-2.41	.016	-0.61	-.05	-2.18	.021
60-65	-.047	-.04	-1.13	.101	-0.55	-.05	-2.08	.098
Marital state								
Not Married	-.082	.08	-2.02	.058	-.078	.09	-2.11	.061
Divorce	-.072	.07	-2.12	.062	-.068	.07	-1.17	.057
Financial support for your child								
No	.007	.02	0.28	.779	.005	.04	0.27	.773
Changing in women's lives due to the COVID-19					-.019	-.20	-6.99	<.001
Family roles	-	-	-	-	0.31	.20	7.17	<.001
R ²	.014				.108			
Adjusted R ²	.170				.247			
F (p)	10.76(<.001)				31.41(<.001)			

Note: †Reference:50-59 =0; Married=0.

the explained variance was 10.8%. In the second stage, changes in women's lives due to COVID-19 and family roles, which showed a significant correlation with perceptions of family caregiving, were included. The regression model was significant ($F=31.41$, $p<.001$), with an explained variance of 24.7%, which is a significant increase of 13.9% from the first stage. Therefore, age ($\beta=-0.61$, $p=.021$), changes in women's lives due to COVID-19 ($\beta=-.20$, $p<.001$), and family roles ($\beta=.20$, $p<.001$) were found to significantly influence perceptions of family caregiving.

4. DISCUSSION

This study examined how the family roles of middle-aged Korean women during the COVID-19 pandemic and the changes in women's lives during COVID-19 influenced their perceptions of family caregiving.

Upon examining the general characteristics of the respondents, it was found that 53.8% were aged 50-59, 42.0% had a high school education, and 62.1% were employed [19]. Considering the age group actively participating in the economy, it appears that the job losses and closures of childcare facilities and other educational institutions due to the COVID-19 pandemic have impacted the employment status of middle-aged women [13]. Considering the respondents' age range of 45 to 65, it appears that most middle-aged Korean women are married; however, due to being unmarried or divorced, the importance of economic independence and self-health management is increasingly emphasized. A total of 78.6% of the married respondents said their husbands had a job, while 12.4% said their husbands were jobless. In addition, 79.5% of the respondents had children; 57.2% of these respondents stated they provided financial help for their children, while 5.9% received financial help from their children.

In this study, a perception of family care among Korean middle-aged women was scored at 2.32 out of 4 points. When compared with the results from a study by

Oh *et al.* [5], who had identified the perceptions of family care using data from the 7th wave of the KLoWF, a change in the perception of family care before and after the outbreak of COVID-19 was observed in the present study. Furthermore, in the study by Oh *et al.* [5], perceptions of family care were found to be higher than in the current study. This indicates that perceptions of family care decreased during the COVID-19 pandemic. Although the time that families spent physically together increased during the pandemic due to social distancing and self-isolation measures aimed at preventing the spread of COVID-19 [1], it was suggested that whether individuals intend to engage in preventive behavior could critically influence disease control throughout society due to the nature of the virus [20]. This suggests that perceptions of family care might have decreased due to individually oriented lifestyles.

Factors that were identified as influencing the perceptions of family caregiving among middle-aged Korean women due to COVID-19 included age changes in women's lives due to COVID-19, and family roles. The research results indicating that age influences the perceptions of family caregiving were found to be consistent with the findings of Oh *et al.* [5]. Depending on social changes, differences in perceptions of family caregiving may be observed across different age groups of middle-aged women. With recent trends toward delayed marriage and higher age at childbirth, an increasing number of middle-aged women are being noted who have young children [13]. Additionally, new caregiving roles, such as caring for aging parents or grandchildren, are emerging, underscoring the need for age-specific tailored support and policies. It has been demonstrated that changes in women's lives due to COVID-19 have influenced perceptions of family caregiving. Women whose lives were perceived to have significantly changed due to COVID-19 were found to have a lower perception of family caregiving, whereas those who perceived less change in their lives due to the pandemic were found to have a

higher perception of family caregiving. Unlike in the past, where family caregiving was strictly perceived as the role of women [5], the perception of the need for middle-aged women to take responsibility for their own lives is growing as their roles in family and society expand [21]. The changes in women's lives due to COVID-19 are also important in relation to perceptions of family caregiving, particularly in terms of health practices. Middle-aged women are entering a critical period with physical changes such as menopause, making access to health services for regular check-ups and treatments important. Following the COVID-19 pandemic, middle-aged women have become more mindful of their subjective well-being in physical, mental, and social health aspects [22, 23], which can manifest as a willingness to carefully manage their health and take preventive measures to protect themselves and their family members from the virus [6, 24, 25].

It has been shown that the role of the family also influences perceptions of family caregiving. Family roles entail the awareness of individuals having equal rights within the family and sharing responsibilities [17]. According to research by Song and Lee [26], households that believe in more equal roles for women within the family tend to achieve a more balanced approach to family caregiving. This should be examined in relation to the perception of traditional female gender roles.

In the past, women tended to take on full responsibility for household chores and childcare, exhibiting a dependent and accepting attitude towards men [27]. However, family roles are changing due to equal educational opportunities and participation in economic activities. Despite this, the COVID-19 crisis has led to the reassignment of family caregiving responsibilities back to women, causing fractures in the compatibility of paid work and household duties, and increasing concerns about the return of domestic responsibilities to women. Men and women are reverting to past norms [2]. Therefore, in the context of the prolonged COVID-19 situation, it is necessary for middle-aged women to accurately understand family roles and recognize family caregiving as a shared responsibility rather than an individual one. Moreover, the focus should not only be on traditional perceptions of family caregiving but also on continuous research on how perceptions of family caregiving have evolved over time.

CONCLUSION

This study utilized national data from the 8th Korea Longitudinal Study of Women and Families (KLoWF) to examine the perceptions of family caregiving among Korean middle-aged women during the COVID-19 pandemic. Research on the perception of family caregiving is crucial in health because it explores how individuals' understanding and attitudes toward health and illness guide their coping strategies and health management behaviors [28]. The findings highlighted changes in middle-aged women's participation in family and caregiving roles, family roles, and balance within the

family, providing valuable foundational data for future research on the life perceptions and proactive health practices of middle-aged women. This study is notable for being the first to investigate these perceptions during the pandemic. And the use of extensive panel data enables tracking changes over time, underscoring the need for ongoing research.

AUTHORS' CONTRIBUTION

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

COVID-19 = Coronavirus disease

KLoWF = Korean Longitudinal Survey of Women and Families

SD = Standard deviations

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The 2020 Women and Family Panel Survey used in this study was conducted after approval from the bioethics review committee within the Korea Women's Policy Institute (IRB NO: 2020-02).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Verbal and written information about the study was given to each potential participant. Participation was voluntary and based on written informed consent. Participants were informed that they could withdraw at any time and that all data would be confidentially treated.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the [The Korean Longitudinal Survey of Women and Families (KLoWF)] at [<https://gsis.kwdi.re.kr/klowf/portal/dataSet/rdsFileListPage.do?>], reference number [2020 Research Report-2]"

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CONFLICT OF INTEREST

The authors declare no conflict of interest financial or otherwise.

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