



Filicide-Suicide in South Korea: Content Analysis of Newspaper Articles (2010–2020)

Myeong-Sook Yoon¹ · Hyun Kyoung Yu¹ · Soo-Bi Lee²

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Abstract

Purpose Filicide-suicide is the most extreme form of family violence. This study identifies the traits of such cases by analyzing their prevalence, victims and perpetrators' characteristics, methods, and motives based on the content of relevant newspaper articles.

Methods Data were collected from representative newspapers from 2010 to 2020. A content analysis of 249 filicide-suicide cases was conducted.

Results Most filicide-suicide cases occurred at home. The most commonly used method for filicide-suicide was carbon monoxide poisoning; such cases were especially high among parents in their 30 s and 40 s. The second most commonly used method was strangulation or hanging, and adopted 1.5 times more often for filicide than for parents' suicide. Regarding the perpetrators and victims' characteristics, 58.2% of the cases were maternal filicide, followed by filicide involving both parents (26.1%), and paternal filicide (15.8%). Most of the children (75.1%) were minors, indicating that most filicide cases involve the parents' violation of their children's human rights. Regarding maternal filicide, most mothers were in their 30 s, and among all filicide-suicide cases, the majority of the perpetrators (63.6%) were in their 30 s and 40 s. The most common motive was financial difficulties, followed by difficulties in child rearing and hardships due to parents' physical or mental illness.

Conclusions This study revealed that the problem of filicide-suicide in South Korean society is an extreme form of domestic violence disguised as parental responsibility, and requires suicide prevention interventions and policies that focus on family relationships and strengthening social responsibility for filicide.

Keywords Filicide-suicide · Collective suicide of families · Maternal filicide · Paternal filicide · Familism · Child homicide · Familicide

Introduction

South Korea has had the highest suicide rate among Organization for Economic Co-operation and Development (OECD) countries, earning it the notorious title of “suicide republic” (OECD, 2017). Government-led efforts to reduce the suicide rate at a national level contributed to reducing the absolute number of suicides in 2020, with the suicide rate per 100,000 people decreasing from 26.9 in 2019 to 25.7

in 2020, but the figures remain high compared with other countries (National Statistics Office, 2021). Suicide cannot be explained by psychological factors or individual psychopathological causes alone, as it reflects the social structure and culture of the place where the suicide occurs (Phillips et al., 2002). Suicide, has its own internalized ideology, structure, and societal culture, and is the result of social processes of negotiation, judgment, and decision-making and is a product of social definition (Baller & Richardson, 2002; Näher et al., 2020).

“Filicide-suicide” or “collective family suicide” refers to an attempt by a parent or guardian to kill a child and then die by suicide. Terms such as child murder, filicide-suicide, homicide-suicide, or familicide in the family, are more appropriate for this phenomenon (Debowska et al., 2015; Jung et al., 2020; Lee, 2012; Murfree et al., 2022). However, the term collective family suicide is commonly used, as

✉ Soo-Bi Lee
soobi88@hanmail.net

¹ Department of Social Welfare, Jeonbuk National University, Jeonju, Republic of Korea

² Department of Social Welfare (BK21 FOUR), Jeonbuk National University, 567 Baekje-Daero, Deokjin-Gu, Jeonju-Si, Jeollabuk-Do 54896, Republic of Korea

Korean society deems spouses and children as a single, bound unit (Lee, 2007). Further, Confucian family relationships that value the rights of the head of the household in Korean society and the concept of regarding children as parents' property rather than as independent individuals can be regarded as factors that influence familicide.

Common factors affecting filicide-suicide include mental health issues, such as relationship conflict between male and female perpetrators, depression, and resentment toward partners (Aho et al., 2017; Murfree et al., 2022). In general, intimate partner violence (IPV), family violence, separation and divorce, substance abuse, and a socioeconomic crisis in the home are significant risk factors (Fegadel & Heide, 2017; Holland et al., 2018; Logan et al., 2013). Although financial problems are present in familicide, a study found that the prevalence of familicide motivated is not directly related to financial problems (Liem et al., 2013). Perpetrators are predominantly male, tend to be older, and often kill multiple children rather than just one child (Debowska et al., 2015; Shackelford et al., 2005). Perpetrators are also more likely to be biological parents than step-parents, and perpetrators that only commit filicide are less likely to commit suicide than filicide-suicide perpetrators (Liem et al., 2010).

While studies have classified filicide-suicide differently according to the perpetrators' gender, depression and severe mental illness are the most common factors in maternal filicide-suicide with multiple victims (Debowska et al., 2015; Meszaros & Fischer-Danzinger, 2000). In contrast, paternal filicide-suicide is often caused by retaliation and hostility, for example, as a result of marital breakdown, separation, and divorce, and perpetrators are also more likely to kill their children and commit suicide after filicide (Adinkrah, 2003; Wilson et al., 1995). However, Liem et al. (2010) reported no gender difference among filicide-suicide perpetrators; while suicide attempt rates among women are higher, they found no significant gender differences as women often used less lethal suicide methods.

In recent years, despite the Korean government's efforts to prevent child death and suicide, filicide-suicide continues to increase. An accurate understanding of the situation is essential for prevention and intervention to address the filicide-suicide problem. However, the concept and definition of child death by parents are very diverse, and it is difficult to analyze the causes because of difficulties in finding accurate statistical data. It is not easy to obtain data on filicide-suicide because an investigation is not practically feasible when a perpetrator dies by suicide. It is also easy to conceal the death of a child due to social custom and difficult to identify the cause of death. When it comes to the collection of national statistical data, the United States and Australia have a "child death review team" comprising multidisciplinary experts to review child death cases and identify the cause of death. South Korea, however, has no such team, which

makes it more difficult to review and analyze the causes and conditions related to a child's death (Parrish et al., 2017). Moreover, there is a possibility that parents may hide cases because of the stigma of child death, leading to lower child mortality rate statistics (Johnson, 2000).

Although its incidence rate is low in proportion to the total number of suicides, filicide-suicide is the most extreme form of family violence. There is an urgent need for social and institutional intervention to help survivors live a full life in the aftermath of the experience (Chan et al., 2004). Currently, there is no official statistical indicator or accurate aggregation for filicide-suicide in South Korea; boundaries between collective family suicide and filicide by parents are ambiguous. The Korean Institute of Criminology and Justice reported 426 cases of suicide after killing a family member from January 2000 to October 2019, and over 58% of these cases included children. As these statistics do not include cases where the perpetrators have died, they reflect only a limited number of such cases (<http://www.segye.com>).

There are limitations to an in-depth analysis due to the lack of official statistical data and the nature of a suicide where both the perpetrator and the victim die. As filicide-suicide is mainly addressed as a social issue in South Korean media, analyzing newspaper articles may provide data that can supplement the cases not reflected in public statistics (Lee et al., 2009; Wahl et al., 2002).

This study explores the status, causes, and multidimensional characteristics of filicide-suicide incidents in South Korea through a content analysis of the relevant newspaper articles. Furthermore, the study aims to provide basic data to establish policies and services to prevent filicide-suicide in the future and support families in crisis who show warning signs of filicide.

Methods

Materials

The analysis materials in this study are newspaper articles reporting filicide-suicide cases in South Korea, and were collected through an online search. To minimize article omission, three collation methods were used. First, a search was conducted for articles in 17 major daily newspapers in South Korea. Second, a search was conducted on the Daum (www.daum.net) and Naver (www.naver.com) websites (the largest web portals with search engines in South Korea). Third, news search sites operated by major daily newspapers, such as "Donga.com" and "JoongAng Ilbo," and those by local newspapers covering regional events, were included in the search.

The subject of this study is filicide-suicide. We searched and analyzed all articles on cases reported over the past

decade from January 2010 to December 2020. The keywords for extracting the articles included: collective family suicide, familicide, homicide-suicide, killing of children, child murder (homicide), parent suicide, and filicide. Articles that covered filicide-suicide cases were analyzed. Where articles reported on the same incident, articles that included the most information on case status and characteristics were selected. Further, cases in which two or more family members attempted suicide and at least one died were classified as a filicide-suicide and included in the analysis. The search period for this study was from April 5, 2021, to April 10, 2021, and a total of 249 filicide-suicide cases were analyzed.

Data Analysis

A content analysis was performed to understand the status and multidimensional characteristics of filicide-suicide reported in newspaper articles. A content analysis entails analyzing the symbolic content by reducing the content (e.g., all the words or visual images) contained in a single communication, such as a newspaper article or television program, into several categories representing the characteristics that are relevant to the research interest (Scheufele, 1999). Thus, it categorizes or codes the collected information and interprets who, why, what, how, and to whom the event occurred and the results that were obtained (Kim et al., 2013). This allows for the conversion of qualitative data into quantitative data and facilitates research with long-term information.

First, to investigate the reporting trends and circumstances of filicide-suicide, the frequency (percentage) of each was examined after dividing the number of reported incidents by year, season, and place of suicide. Second, to examine the method of filicide-suicide and the age of the perpetrator (parents) and victims (children), the methods used for the filicide-suicide were classified into eight categories, including gas, strangulation or choking, falling or jumping from a high building, poisoning, drowning, use of a knife (sharp object), arson, and others, and the frequency (percentage) of each was confirmed by categorizing the ages of the parents and children. Third, based on the content analysis of the newspaper articles, cases were classified as perpetrator–victim under filicide-suicide regardless of the number of children killed. Cases were categorized into three types: mother–child, father–child, and parents–child, when the perpetrator was clearly a mother, a father, or both parents, or a suicide with the entire family. The frequency and percentage of the relationship types were examined according to age group. Last, to analyze the causes of filicide-suicides, a frequency analysis was conducted by classifying the causes into six categories: economic hardship, child-rearing problems, parental illnesses, family discord, pessimism, and religious problems.

Results

Trends and Circumstances of Filicide-Suicide

The analysis results are summarized in Table 1. The highest number of filicide-suicide cases were reported in 2015 (30 cases), followed by 29 cases in 2019, 28 cases in 2014, 26 cases in 2012, and 12 cases in 2018. The number of articles varied slightly by year, with a noticeable increase between 2014 and 2016. This was due to a family suicide case that occurred in 2014 in which a mother and her two daughters committed suicide. The “Three Women Suicides” highlighted a blind spot in South Korea’s national welfare system and caused a social ripple effect large enough to trigger a revision of the related laws. This reflects an increase in social interest in family suicide rather than an actual increase or decrease in the occurrence of incidents. In terms of the occurrence of incidents by season, filicide-suicides occur more frequently in winter, followed by fall, spring, and summer.

With respect to places where parents commit or attempt to commit suicide after filicide, they occurred most frequently in the family home, followed by accommodation types (motels, lodges, etc.), vehicles, mountains, rivers, parks, or seas, and the roof of the family house. A family

Table 1 Trends and circumstances of filicide-suicide

Variable	Item	Number of Cases (%)
Year	2010	22 (8.8)
	2011	16 (6.4)
	2012	26 (10.4)
	2013	22 (8.8)
	2014	28 (11.2)
	2015	30 (12.0)
	2016	25 (10.0)
	2017	16 (6.4)
	2018	12 (4.8)
	2019	29 (11.6)
Season	Spring	59 (23.7)
	Summer	43 (17.3)
	Fall	72 (28.9)
	Winter	75 (30.1)
Place	Family homes	173 (69.5)
	Apartment roofs	15 (6.0)
	Vehicles	19 (7.6)
	Accommodation	20 (8.0)
	Mountains, rivers, parks, and seas	18 (7.2)
	Other	4 (1.6)

home is an enclosed space that others cannot enter easily and where the child or the victim has spent their life with the parent/ perpetrator. It is a place where the victim does not have the ability to fight against the perpetrator or ask for external help.

Methods of Filicide-Suicide and Age Distribution of Parents and Children

The results of the analysis of the filicide-suicide methods and the ages of the parents and children are summarized in Table 2. First, based on the news articles, the most common method of filicide-suicide was gas poisoning using briquettes or charcoal (32.1%). The death rate due to gas poisoning was higher in the parent group over the age of 40 years, which may be due to this demographic group's experience in using briquettes instead of gas or oil boilers for heating during their childhood. Further, briquettes are readily available in South Korea and are considered a less painful suicide method, which lowers the fear of committing or attempting suicide. Such a perception can be explained by the "Werther effect," that is, imitating media reports of celebrity suicides in Korean society that were committed using briquettes. As the highest number of filicide-suicide cases occur in winter, the suicide method of gas poisoning using briquettes and charcoal may be more common as they are easy to purchase in winter.

In 20.9% of the cases, the perpetrators used their relative physical strength to suffocate their victims by hand in a short time without using external tools. In 9.6% of the cases, filicide-suicide was committed or attempted by falling or jumping off a high building; in 8.8% poisonous substances were used; in 6.4% knives or sharp objects were used; in 14.4% other methods were used; in 4.8% victims died by drowning; in 2.8% they died as a result of arson.

Characteristics of Each Filicide-Suicide Case Type and Parent-Child Age Distribution

Table 3 summarizes the perpetrator-victim relationship type and age distribution in filicide-suicide cases. The relationship types in filicide-suicides were divided into three categories: mother-child, father-child, and parents-child. Maternal filicide accounted for 55.4% of the cases, both parents accounted for 23.7% of the cases, and paternal filicide for 20.9% of the cases. Maternal filicide was about 2.5 times more prevalent than paternal filicide. This can be understood by considering that raising and caring for children is traditionally the woman's responsibility in Korean society; hence, the burden of child-rearing may be greater for women.

An analysis of the age distribution of the parents and children show that the children were under the age of 10 years in 52.2% of the cases and teenagers in 28.1% of the cases. In more than 80% of the cases the victim (child) was a minor, suggesting that the perpetrator (parent) regarded their under-age child as a dependent being, not as an independent person, thereby equating their choice with that of the child. As for parents' age distribution, those in their 30 s and 40 s accounted for 67.8% of the total.

Causes of Filicide-Suicide

The causes of filicide-suicide were analyzed by year of occurrence and type of perpetrator-victim relationship (Table 4). Economic hardships were found to be the most common cause of filicide-suicide, followed by the physical or mental illness of a parent, disability of a child and parenting stress, marital and family discord, pessimism, and religious problems. Thus, economic hardships accounted for a large portion of the causes of filicide-suicide, which is consistent with the results of a social survey (Statistics Korea, 2016) reporting that economic problems are the

Table 2 Age distribution of parents and children and methods of filicide-suicide

	Victim: Child's Age				Perpetrator: Parent's Age					
	Under 10	10 s	20 s+	Total	20 s	30 s	40 s	50 s	60 s+	Total
Gas	30 (23.1)	29 (41.4)	17 (34.7)	76 (30.5)	1 (6.3)	23 (30.3)	36 (38.7)	9 (34.6)	11 (28.9)	80 (32.1)
Strangulation/ choking	40 (30.8)	19 (27.1)	11 (22.4)	70 (28.1)	3 (18.8)	20 (26.3)	16 (17.2)	5 (19.2)	8 (21.1)	52 (20.9)
Falling/jumping	17 (13.1)	2 (2.9)	3 (6.1)	22 (8.8)	3 (18.8)	11 (14.5)	6 (6.5)	2 (7.7)	2 (5.3)	24 (9.6)
Poisoning	9 (6.9)	6 (8.6)	6 (12.2)	21 (8.4)	-	2 (2.6)	11 (11.8)	1 (3.8)	8 (21.1)	22 (8.8)
Drowning	9 (6.9)	3 (4.3)	5 (10.2)	17 (6.8)	1 (6.3)	-	5 (5.4)	2 (7.7)	4 (10.5)	12 (4.8)
Knife or sharp object	9 (6.9)	9 (12.9)	2 (4.1)	20 (8.0)	-	5 (6.6)	6 (6.5)	4 (15.4)	1 (2.6)	16 (6.4)
Arson	2 (1.5)	1 (1.4)	2 (4.1)	5 (2.0)	2 (12.5)	-	2 (2.2)	2 (7.7)	1 (2.6)	7 (2.8)
Other*	14 (10.8)	1 (1.4)	3 (6.1)	18 (7.2)	6 (37.5)	15 (19.7)	11 (11.8)	1 (3.8)	3 (7.9)	36 (14.5)
Total (%)	130 (52.2)	70 (28.1)	49 (19.7)	249 (100.0)	16 (6.4)	76 (30.5)	93 (37.3)	26 (10.4)	38 (15.3)	249 (100.0)

*Other includes cases of unidentified causes, attempted self-injury (wrist cutting), and intentional traffic accidents; methods used in the cases of parental suicide attempts and child survival are also included

Table 3 Age distribution of parents and children and perpetrator–victim type

Perpetrator–Victim Type	Victim: Child's Age				Perpetrator: Parent's Age					
	Under 10 (%)	10 s (%)	20 s + (%)	Total (%)	20 s (%)	30 s (%)	40 s (%)	50 s (%)	60 s + (%)	Total (%)
Mother–child	76 (58.5)	26 (37.1)	36 (73.5)	138 (55.4)	11 (68.8)	51 (67.1)	41 (44.1)	12 (46.2)	23 (60.5)	138 (55.4)
Father–child	27 (20.8)	19 (27.1)	6 (12.2)	52 (20.9)	3 (18.8)	11 (14.5)	30 (32.3)	4 (15.4)	4 (10.5)	52 (20.9)
Parents–child	27 (20.8)	25 (35.7)	7 (14.3)	59 (23.7)	2 (12.5)	14 (18.4)	22 (23.7)	10 (38.5)	11 (28.9)	59 (23.7)
Total	130 (52.2)	70 (28.1)	49 (19.7)	249 (100.0)	16 (6.4)	76 (30.5)	93 (37.3)	26 (10.4)	38 (15.3)	249 (100.0)

Parents' age was determined from information in newspaper articles and the age of the oldest member of the family; the children's age was determined on the basis of that of the oldest member of the family after the parents

most significant cause of suicidal ideation in South Korea. This suggests that filicide-suicide is caused by social structural problems, not simply by family discord or individual problems.

On examining the causes of filicide-suicide based on the type of perpetrator–victim relationship, the causes of maternal filicide that were the most prevalent included the physical and mental illness of the parent, economic hardship, disability of a child, and parenting stress. The causes of parents–child suicides included economic hardships, family discord, pessimism, child-rearing problems, and parental illness. The causes of paternal filicide included economic hardships, child-rearing problems, and family discord.

Discussion

The status, types, causes, and characteristics of filicide-suicide were analyzed on the basis of 249 newspaper reports over the past decade (2010–2020). First, the overall number of incidents reported has increased yearly since 2014. Filicide-suicide is more prevalent in the winter. The results seem to reflect increased social interest following a 2014 collective or family suicide case that had a ripple effect on Korean society. The findings were consistent with the results of studies reporting higher general suicide rates in winter (Kim & Hwang, 2006) and a sharp increase in the number of homicides in summer and winter (Sisti et al., 2012). Thus, it is necessary to prepare suicide prevention policies, such as actively carrying out suicide prevention campaigns and identifying families in crisis during winter, considering the correlation between seasons and suicide rates or murder cases.

Second, the most common place for filicide-suicide was the family home, and the methods included gas poisoning, strangulation or choking, and falling or jumping from buildings. This suggests that filicide-suicide mainly occurs in a shared family space and closed space where it is difficult for the victim to expect or call for external help. Regarding the method of filicide and suicide, the use of firearms is more common in other countries (Karlsson et al., 2021); however, in South Korea, the possession of firearms is not legally permitted, which explains the difference in the methods used. In particular, South Korea has the highest number of cases where the entire family dies due to gas poisoning asphyxiation, which can be seen as obscuring the parents' action of killing their children. This study's results, in line with the results of a study reporting frequent suicides by carbon monoxide gas poisoning among the middle-aged in South Korea (Lee et al., 2016), highlight the importance of appropriate regulations on sales and access to such widely used suicide tools. Although there are currently regulatory recommendations on the suggestion of suicide tools and methods in media reports in South Korea, it is still easy to search for and

Table 4 Causes of filicide-suicide by perpetrator–victim type

Cause	Year	Perpetrator–Victim Type			Total (%)
		Mother–Child (%)	Father–Child (%)	Parents–Child (%)	
Economic hardship (bankruptcy, stock investment failures, living expenses, credit card debt, and gambling debt)	2010	4(10.8)	1(3.3)	2(4.8)	7(6.4)
	2011	5 (13.5)	2 (6.7)	4 (9.5)	11 (10.1)
	2012	5 (13.5)	3 (10.0)	2 (4.8)	10 (9.2)
	2013	4 (10.8)	1 (3.3)	2 (4.8)	7 (6.4)
	2014	4 (10.8)	3 (10.0)	5 (11.9)	12 (11.0)
	2015	2 (5.4)	3 (10.0)	8 (19.0)	13 (11.9)
	2016	3 (8.1)	-	4 (9.5)	7 (6.4)
	2017	4 (10.8)	-	-	4 (3.7)
	2018	-	4 (13.3)	1 (2.4)	5 (4.6)
	2019	3 (8.1)	7 (23.3)	13 (31.0)	23 (21.1)
	2020	3 (8.1)	6 (20.0)	1 (2.4)	10 (9.2)
Total		37 (33.9)	30 (27.5)	42 (38.5)	109 (100.0)
Ratio of economic hardship in total (%)		(26.8)	(58.8)	(70.0)	(43.8)
Child-rearing problems (parenting stress and mental/physical disabilities of children)	2010	3 (9.4)	-	-	3 (6.8)
	2011	2 (6.3)	-	-	2 (4.5)
	2012	3 (9.4)	-	1 (25.0)	4 (9.1)
	2013	3 (9.4)	2 (25.0)	1 (25.0)	6 (13.6)
	2014	4 (12.5)	-	1 (25.0)	5 (11.4)
	2015	5 (15.6)	-	1 (25.0)	6 (13.6)
	2016	3 (9.4)	3 (37.5)	-	6 (13.6)
	2017	3 (9.4)	1 (12.5)	-	4 (9.1)
	2018	-	1 (12.5)	-	1 (2.3)
	2019	2 (6.3)	-	-	2 (4.5)
	2020	4 (12.5)	1 (12.5)	-	5 (11.4)
Total		32 (72.7)	8 (18.2)	4 (9.1)	44 (100.0)
Ratio of child-rearing problems in total (%)		(23.2)	(15.7)	(6.7)	(17.7)
Parental illness (mental/physical illnesses of parents)	2010	4 (9.8)	-	1 (33.3)	5 (10.4)
	2011	1 (2.4)	-	-	1 (2.1)
	2012	6 (14.6)	-	-	6 (12.5)
	2013	5 (12.2)	1 (25.0)	-	6 (12.5)
	2014	3 (7.3)	1 (25.0)	-	4 (8.3)
	2015	3 (7.3)	-	-	3 (6.3)
	2016	4 (9.8)	-	1 (33.3)	5 (10.4)
	2017	7 (17.1)	-	-	7 (14.6)
	2018	2 (4.9)	1 (25.0)	1 (33.3)	4 (8.3)
	2019	1 (2.4)	1 (25.0)	-	2 (4.2)
	2020	5 (12.2)	-	-	5 (10.4)
Total		41 (85.4)	4 (8.3)	3 (6.3)	48 (100.0)
Ratio of parental illnesses in total (%)		(29.7)	(7.8)	(5.0)	(19.3)

Table 4 (continued)

Cause	Year	Perpetrator–Victim Type			Total (%)	
		Mother–Child (%)	Father–Child (%)	Parents–Child (%)		
Family discord (marital discord, conflict with grandparents, parent–child conflicts)	2010	1 (5.0)	2 (25.0)	-	3 (8.8)	
	2011	-	-	1 (16.7)	1 (2.9)	
	2012	3 (15.0)	1 (12.5)	-	4 (11.8)	
	2013	1 (5.0)	-	2 (33.3)	3 (8.8)	
	2014	4 (20.0)	1 (12.5)	-	5 (14.7)	
	2015	4 (20.0)	1 (12.5)	2 (33.3)	7 (20.6)	
	2016	3 (15.0)	-	1 (16.7)	4 (11.8)	
	2017	1 (5.0)	-	-	1 (2.9)	
	2018	2 (10.0)	-	-	2 (5.9)	
	2019	1 (5.0)	1 (12.5)	-	2 (5.9)	
	2020	-	2 (25.0)	-	2 (5.9)	
Total		20 (58.8)	8 (23.5)	6 (17.6)	34 (100.0)	
Ratio of family discord in total (%)		(14.5)	(15.7)	(10.0)	(13.7)	
Pessimism (social negligence)	2010	1 (16.7)	-	2 (40.0)	3 (25.0)	
	2011	1 (16.7)	-	-	1 (8.3)	
	2012	1 (16.7)	-	-	1 (8.3)	
	2013	-	-	-	0	
	2014	1 (16.7)	-	1 (20.0)	2 (16.7)	
	2015	-	-	1 (20.0)	1 (8.3)	
	2016	1 (16.7)	1 (100.0)	1 (20.0)	3 (25.0)	
	2017–2019	-	-	-	0	
	2020	1 (16.7)	-	-	1 (8.3)	
	Total		6 (50.0)	1 (8.3)	5 (41.7)	12 (100.0)
	Ratio of pessimism in total (%)		(4.3)	(2.0)	(8.3)	(4.8)
Religious problems (religious rituals, murder due to sect leaders' doctrines)	2010	1 (50.0)	-	-	1 (50.0)	
	2011	-	-	-	-	
	2012	1 (50.0)	-	-	1 (50.0)	
	2013–2020	-	-	-	-	
	Total		2 (100.0)	0 (0.0)	0 (0.0)	2 (100.0)
Ratio of religious problems in total (%)		(1.4)	(0.0)	(0.0)	(0.8)	
Total (%)		138 (55.4)	51 (20.5)	60 (24.1)	249 (100.0)	

find older articles that report on cases in which celebrities committed suicide by using briquettes or carbon monoxide gas or hanging themselves, or cases in which the entire family committed suicide using briquettes. Therefore, there is a need for alternative suicide prevention measures, such as revising previously reported articles on this issue in accordance with regulatory recommendations and making the process of purchasing briquettes, which are readily available in Korean society, more detailed and thorough.

Third, an examination of the relationship types in filicide-suicide and the age distribution of the children as victims and the parents as perpetrators has shown that cases of filicide by mothers accounted for 55.4% of the incidences,

followed by both parents and cases of filicide by fathers. Children under 10 years of age are typical victims, with parents in their 30 s to 40 s as the common perpetrators. This represents deep-rooted familism in South Korea and the collective sense of parental authority that views young children as their property, thereby regarding parental suicide after the murder of a child as a family suicide as a dysfunctional reality. Furthermore, parents in their 30 s and 40 s would be performing various roles at work and in the home, and the accompanying tension and stress may lead to suicidal ideation. This often causes an extended suicide phenomenon, in which the parents feel obligated to end their children's lives and their own lives because of an excessive

sense of responsibility. Therefore, to raise awareness that young children are not the property of their parents and target the parent group at high risk for suicide or vulnerable age groups, services must be provided that link coping measures and mental health promotion programs with local communities, workplaces, mental health institutions, and family support systems.

Fourth, economic hardship were found to be the most frequent cause of filicide-suicide, and the number of suicides after filicide by a mother was higher than that of other types of perpetrators. These results are relatively consistent with those reported in earlier suicide studies in South Korea (Ahn et al., 1997; Jeong, 2004; Jung et al., 2014; Kim & Hwang, 2006).

In contrast, studies in other countries have reported mixed results. Many studies found that the perpetrators of filicide-suicide were parents, especially men, who have a mental illness or unstable psychological problems, such as depression, personality disorders, substance abuse, and violence (Aho et al., 2017; Debowska et al., 2015; Fegadel & Heide, 2017; Holland et al., 2018).

This difference can be considered from several perspectives. The definition of filicide-suicide, the relationship between the perpetrator and victim, the number of victims, and the extent of the primary victims vary depending on the type of study, which may lead to different results (Karlsson et al., 2021). In addition, studies from other countries have suggested two types of suicide after a family murder. The first type is suicide after killing family members for altruistic reasons to “protect” their family from financial problems related to unemployment and debt (Fox & Levin, 2011; Liem et al., 2009; Scheinin et al., 2011). The second type is killing a spouse and children out of revenge and jealousy due to separation and conflict between spouses. In the latter case, the primary victim is the spouse, and children are killed out of revenge, while focusing on the spouse as the main victim (Fox & Levin, 2011; Liem & Koenraadt, 2008; Liem et al., 2013). Most studies from other countries fall in the second filicide-suicide category. These studies focused on the relationship and status of the perpetrator rather than background factors, which is not consistent with this study. In this aspect, it is necessary to understand the complex characteristics by comprehensively evaluating the psychological and physical health and personality of the family, the family’s socioeconomic status, and experiences of social integration based on various sources of information, such as interviews with close neighbors of the perpetrator and family members, acquaintances, and hospital records (Cavanagh et al., 2003; Liem et al., 2013).

Next, this study examined the causes according to the type of perpetrator (parent) and victim (child) relationship. The causes for filicide by the mother included parental diseases and parenting stress, while the most prominent cause

for filicide by the father and both parents was economic hardship. Differences in the burden of traditional gender roles for family care and support between parents seems to contribute to filicide-suicide cases; that is, maternal filicide is mainly associated with illnesses or disabilities of the parent or child, economic hardship, and child-rearing stress, whereas economic hardship is the main cause for paternal filicide and suicides where both parents are involved. This reflects the burden of the traditional gender roles in Korean society, where fathers are the breadwinners and in charge of economic support with responsibility for the family’s livelihood, while nurturing and caring for children is centered on mothers.

Furthermore, the differences in the causes of maternal and paternal filicide could be considered in association with the differences in traditional gender roles of family care and livelihood support. Accordingly, it is important to actively identify cases and provide social welfare support for families in crisis who are socially and economically vulnerable or lack a social safety net to prevent filicide-suicide. Interested organizations and resources must be linked through public–private partnerships with local communities to address various difficulties in family care and livelihood.

This study is significant because it analyzed newspaper articles to explore the status, causes, and characteristics of filicide-suicide in a multidimensional manner, in the absence of official statistical data and in-depth analysis of filicide-suicide in South Korea. However, it is difficult to grasp the full extent of filicide-suicide in in depth, considering the nature of an event in which both the victim and the perpetrator dies. In addition, this study was based only on the content of newspaper articles, which has limitations in terms of performing an in-depth analysis of a complex problem. Therefore, it is necessary to consider the interpretation of the results carefully. In addition to the analysis of newspaper articles, future in-depth research could be conducted from various perspectives, such as psychological autopsies related to filicide-suicide, filicide research in terms of the human rights of children, and case studies of parents who failed in a suicide attempt.

Conclusion

This study explored the multidimensional characteristics of filicide-suicide, a unique suicide phenomenon called “collective family suicide” in Korean society, through a content analysis of newspaper articles reporting such cases. Various risk factors and characteristics of filicide-suicide in Korean society were identified, such as familism, deeming a family as a group sharing a common destiny, a parental perception that views children as their property, media reports on specific means of suicide, briquettes as a readily available suicide tool, and common causes of filicide-suicide,

including economic hardship and challenges in child-rearing. Filicide-suicide is an extreme form of domestic violence arising from parents' misconception of children as their property and the absence of a social safety net to protect children from families experiencing severe economic hardship. Through these results, this study provides essential data for preventing filicide-suicide in the future by reflecting the unique characteristics of Korean society.

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Declarations

Ethics Approval This study was approved by the relevant Institutional Review Board according to the Declaration of Helsinki [IRB: JBNU NON2022-008].

Consent for Publication Not applicable.

Competing Interests The authors declare that they have no competing interests.

Conflict of Interest The authors declare that they have no conflict of interest.

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References

- Adinkrah, M. (2003). Men who kill their own children: Paternal filicide incidents in contemporary Fiji. *Child Abuse & Neglect*, 27(5), 557–568. [https://doi.org/10.1016/S0145-2134\(03\)00041-3](https://doi.org/10.1016/S0145-2134(03)00041-3)
- Ahn, D. H., Kim, Y. Y., & Son, H. G. (1997). Joint suicide in Korea: A review of newspaper reports. *Mental Health Research*, 16, 181–193.
- Aho, A. L., Remahl, A., & Paavilainen, E. (2017). Homicide in the western family and background factors of a perpetrator. *Scandinavian Journal of Public Health*, 45(5), 555–568. <https://doi.org/10.1177/1403494817705587>
- Baller, R. D., & Richardson, K. K. (2002). Social integration, imitation, and the geographic patterning of suicide. *American Sociological Review*, 67(6), 873–878. <https://doi.org/10.2307/3088974>
- Cavanagh, J. T. O., Carson, A. J., Sharpe, M., & Lawrie, S. M. (2003). Psychological autopsy studies of suicide: A systematic review. *Psychological Medicine*, 33(3), 395–405. <https://doi.org/10.1017/S0033291702006943>
- Chan, C. Y., Beh, S. L., & Broadhurst, R. G. (2004). Homicide–suicide in Hong Kong, 1989–1998. *Forensic Science International*, 140(2), 261–267. <https://doi.org/10.1016/j.forsciint.2003.12.001>
- Debowska, A., Boduszek, D., & Dhingra, K. (2015). Victim, perpetrator, and offense characteristics in filicide and filicide-suicide. *Aggression and Violent Behavior*, 21, 113–124. <https://doi.org/10.1016/j.avb.2015.01.011>
- Fegadel, A. R., & Heide, K. M. (2017). Offspring-perpetrated filicide: Examining family homicides involving parents as victims. *International Journal of Offender Therapy and Comparative Criminology*, 61(1), 6–24. <https://doi.org/10.1177/0306624X15589091>
- Fox, J. A., & Levin, J. (2011). *Extreme killing: Understanding serial and mass murder*. Sage.
- Holland, K. M., Brown, S. V., Hall, J. E., & Logan, J. E. (2018). Circumstances preceding homicide-suicides involving child victims: A qualitative analysis. *Journal of Interpersonal Violence*, 33(3), 379–401. <https://doi.org/10.1177/0886260515605124>
- Jeong, S. M. (2004). A study on the murder-suicide. *Korean Journal of Public Safety and Criminal Justice*, 18, 415–454.
- Johnson, C. F. (2000). Death from child abuse and neglect. *The Lancet*, 356, S14.
- Jung, K. H., Kim, H. S., Lee, E. S., Choi, I. S., Lim, H. Y., Lee, B. W., ..., Hong, H. G. (2020). Cluster analysis of child homicide in South Korea. *Child Abuse & Neglect*, 101, 104322. <https://doi.org/10.1016/j.chiabu.2019.104322>
- Jung, S., Lee, J., Kim, J., Taq, G., Oh, I., & Myoung, E. (2014). Analysis of parricide and filicide in Korea. *Korean Journal of Forensic Science*, 38(2), 66–72. <https://doi.org/10.7580/kjlm.2014.38.2.66>
- Karlsson, L. C., Antfolk, J., Putkonen, H., Amon, S., da Silva Guerreiro, J., de Vogel, V., ..., Weizmann-Henelius, G. (2021). Familicide: A systematic Literature Review. *Trauma, Violence, & Abuse*, 22(1), 83–98. <https://doi.org/10.1177/1524838018821955>
- Kim, H. S., & Hwang, C. K. (2006). A study on the murder-suicide in Korean society: Cases on newspaper articles. Regional Development Research Institute (pp. 29–50).
- Kim, J. H., Chung, I. J., Lee, H. Y., & Kim, G. H. (2013). Analysis of newspaper articles on child abuse deaths. *Korean Journal of Social Welfare*, 65(2), 131–154.
- Lee, H. J. (2012). The parent–child suicide pact' and the concept of the family in East Asia: A cross-cultural approach of South Korea, China, and Japan. *Journal of Korean Studies*, 40, 187–227.
- Lee, J. Y., Song, J. H., & Lim, B. S. (2016). Characteristics of suicide by carbon monoxide poisoning in Korea. *Journal of Korean Official Statistics*, 21(1), 57–83.
- Lee, M. S. (2007). Social Psychological exploration on the collective suicide of families in Korea. *Health and Social Sciences*, 20, 153–175.
- Lee, M. S., Ko, J. A., Oh, J. H., Shin, Y. S., & Park, J. S. (2009). Trend of internet media report for mental health and suicide. *Journal of Korean Association of Social Psychiatry*, 14(2), 97–104.
- Liem, M., & Koenraadt, F. (2008). Familicide: A comparison with spousal and child homicide by mentally disordered perpetrators. *Criminal Behaviour and Mental Health*, 18(5), 306–318.
- Liem, M., de Vet, R., & Koenraadt, F. (2010). Filicide followed by parasuicide: A comparison of suicidal and non-suicidal child homicide. *Child Abuse & Neglect*, 34(8), 558–562. <https://doi.org/10.1016/j.chiabu.2010.01.010>
- Liem, M., Levin, J., Holland, C., & Fox, J. A. (2013). The nature and prevalence of familicide in the United States, 2000–2009. *Journal of Family Violence*, 28(4), 351–358. <https://doi.org/10.1007/s10896-013-9504-2>
- Liem, M., Postulart, M., & Nieuwebeerta, P. (2009). Homicide-suicide in the Netherlands: An epidemiology. *Homicide Studies*, 13(2), 99–123. <https://doi.org/10.1177/1088767908330833>

- Logan, J. E., Walsh, S., Patel, N., & Hall, J. E. (2013). Homicide-followed-by-suicide incidents involving child victims. *American Journal of Health Behavior, 37*(4), 531–541. <https://doi.org/10.5993/AJHB.37.4.11>
- Murfree, L., DeMaria, A. L., & Schwab-Reese, L. M. (2022). Factors contributing to filicide-suicide: Differences between male and female perpetrators. *Child Abuse & Neglect, 129*, 105637. <https://doi.org/10.1016/j.chiabu.2022.105637>
- Meszáros, K., & Fischer-Danzinger, D. (2000). Extended suicide attempt: Psychopathology, personality and risk factors. *Psychopathology, 33*(1), 5–10. <https://doi.org/10.1159/000029111>
- Näher, A.-F., Rummel-Kluge, C., & Hegerl, U. (2020). Associations of suicide rates with socioeconomic status and social isolation: Findings from longitudinal register and census data. *Frontiers in Psychiatry, 10*, 898. <https://doi.org/10.3389/fpsy.2019.00898>
- National Statistics Office, 2021 → Statistics Korea(2021). Causes of Death Statistics 2020. Retrieved from <http://kostat.go.kr/portal/eng/surveyOutline/5/1/index.static>. Accessed 13 June 2022.
- OECD. (2017). OECD Health Statistics 2017. Retrieved from http://stts.oecd.org/index.aspx?DataSetCode=Health_Stat. Accessed 10 June 2022.
- Parrish, J. W., Schnizer, P. G., Lanier, P., Shanahan, M. E., Daniels, J. L., & Marshall, S. W. (2017). Classification of maltreatment-related mortality by child death review teams: How reliable are they? *Child Abuse & Neglect, 67*, 362–370. <https://doi.org/10.1016/j.chiabu.2017.03.003>
- Phillips, M. R., Yang, G., Zhang, Y., Wang, L., Ji, H., & Zhou, M. (2002). Risk factors for suicide in China: A national case-control psychological autopsy study. *The Lancet, 360*(9347), 1728–1736. [https://doi.org/10.1016/S0140-6736\(02\)11681-3](https://doi.org/10.1016/S0140-6736(02)11681-3)
- Scheinin, L., Rogers, C. B., & Sathyavagiswaran, L. (2011). Familicide-suicide: A cluster of 3 cases in Los Angeles County. *American Journal of Forensic Medicine and Pathology, 32*(4), 327–330. <https://doi.org/10.1097/PAF.0b013e31821a555a>
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication, 49*(1), 103–122. <https://doi.org/10.1111/j.1460-2466.1999.tb02784.x>
- Shackelford, T. K., Weekes-Shakeford, V. A., & Beasley, S. (2005). An exploratory analysis of the contests and circumstances of filicide-suicide in Chicago, 1965–1994. *Aggressive Behavior, 31*(4), 299–406. <https://doi.org/10.1002/ab.20085>
- Sisti, D., Rocchi, M. B., Macciò, A., & Preti, A. (2012). The epidemiology of homicide in Italy by season, day of the week and time of day. *Medicine, Science, and the Law, 52*(2), 100–106. <https://doi.org/10.1258/msl.2011.010147>
- Statistics Korea (2016). *Social survey*. Retrieved from <http://kostat.go.kr/portal/eng/surveyOutline/5/1/index.static>. Accessed 15 June 2022.
- Wahl, O. F., Wood, A., & Richards, R. (2002). Newspaper coverage of mental illness: Is it changing? *Psychiatric Rehabilitation Skills, 6*(1), 9–31. <https://doi.org/10.1080/10973430208408417>
- Wilson, M., Daly, M., & Daniele, A. (1995). Familicide: The killing of spouse and children. *Aggressive Behavior, 21*(4), 275–291. [https://doi.org/10.1002/1098-2337\(1995\)21:4%3c275::AID-AB2480210404%3e3.0.CO;2-S](https://doi.org/10.1002/1098-2337(1995)21:4%3c275::AID-AB2480210404%3e3.0.CO;2-S)

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