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Impact of the Coronavirus Pandemic on Family Well-Being: A Rapid and Scoping Review

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Abstract

The coronavirus disease of 2019 (COVID-19) has had a serious impact not only on the society, economy, and medical system, but also on the families and family members affected by it. This scoping review aimed to describe the effects of the COVID-19 pandemic on family well-being. Original articles in English published between January 2020 and August 2021 that examined the association between COVID-19 and family well-being, were searched on MEDLINE and CINAHL. The literature search was conducted using Mesh or CINAHL Subject Headings on COVID-19 and families. Of the 923 references extracted from MEDLINE and CINAHL, this review included 25 references based on exclusion criteria. The largest number of articles examined the impact of COVID-19 on family caregivers' mental health, followed by its impact on family relationships. The pandemic reportedly worsened family relationships and functioning, increasing domestic violence. The increased burden of caregiving for children and older adults due to COVID-19 was a risk factor for poor physical, psychological, and social health among family caregivers. The workplace environments and health conditions of workers involved with COVID-19 patients affected their family members' physical, psychological, and social health. The social and economic impact of the pandemic could change the internal family system and the permeability of its boundaries, necessitating strategies to maintain an open family system. Additionally, family caregivers are at high risk for poor mental health and need a provision of psychosocial support. Moreover, devising strategies to improve workplace environments and alleviate health issues of workers involved with COVID-19 patients would be crucial for better mental health among their family members.

Keywords

COVID-19, Family Health, Family Well-Being

1. Introduction

A pneumonia of unknown cause, which was later identified as coronavirus disease of 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first diagnosed in Wuhan [1]. The World Health Organization declared COVID-19 a global pandemic on March 11, 2020 [2]. In the context of this pandemic, governments worldwide have taken measures to prevent and control COVID-19 infection [3], which has had a serious impact not only on the society, economy, and medical system, but also on individuals who are surrounded by these systems.

The COVID-19 pandemic is considered a type of Chemical, Biological, Radiological Nuclear, and high-yield Explosive (CBRNE) disaster [4]. A CBRNE disaster includes the uncontrolled release of hazardous chemicals, biological agents, or radioactive substances into the environment, potentially combined with explosions that cause widespread damage [5]. CBRNE disasters cause social disruption (e.g., discrimination, slander, bullying, increase in false rumors and misinformation, dissatisfaction, and discontent with the government and community), economic deterioration (e.g., job loss, decline in economic activities, and shortage of supplies), limitations and changes in individual behaviors (e.g., avoidance of travel and going out, and increase in alcohol and tobacco use), and poor public and individual health (e.g., damage to the medical system) [6] [7]. A systematic review by Brooks *et al.* included 24 quantitative and qualitative studies across 10 countries, where quarantine was imposed owing to direct or potential exposure to SARS, Ebola virus, H1N1 influenza, Middle East Respiratory Syndrome (MERS), equine influenza, or outbreaks of infections. The review showed that quarantine particularly deteriorated individual mental health (e.g., by increasing anxiety, depression, irritability, posttraumatic stress, and emotional exhaustion) [8].

Although previous studies have emphasized the psychological effects of infection outbreaks and their subsequent quarantine on individuals, they could also influence well-being in a family composed of individuals interacting with each other. According to the family systems theory, the family as a system exists in a hierarchical structure within society, with the family and its members falling at a lower level [9]. Thus, changes in a society consequently affect families and their members hierarchically [9]. During the H1N1 influenza pandemic, being a healthcare worker involved with a patient, or hospitalization of a family member infected with the virus complicated the relationship between family members due to its associated health risks [10]. Considering all the prior studies on similar topics, there has been no systematic report on the effects of the COVID-19 pandemic, including measures to prevent and control it, on family health and well-being.

This scoping review therefore aimed to clarify the impact of the COVID-19 pandemic on family well-being, while considering the various steps implemented to mitigate its impact.

2. Methods

2.1. Overview

Studies exploring the influence of COVID-19 on family well-being were reviewed using the scoping review method of Arksey and O'Malley [11]. We also followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for scoping reviews (PRISMA-ScR) [12].

2.2. Search Strategy

A literature search was conducted on MEDLINE and CINAHL using controlled vocabulary terms (*i.e.*, Mesh for MEDLINE and CINAHL Subject Headings for CINAHL). The literature search was conducted in MEDLINE and CINAHL in order to obtain specific suggestions to nursing care. We identified the literature published between January 1, 2020 and August 19, 2021. The terms regarding COVID-19 were "COVID-19" or "SARS-CoV-2" in both MEDLINE and CINAHL. The terms about family were "Family," "Family Characteristics," "Family Relations," "Family Conflict," "Family Health," or "Family Nursing" in MEDLINE; and "Family," "Family Relations," "Family Attitudes," "Patient-Family Relations," "Dysfunctional Family," or "Family Nursing" in CINAHL. Subsequently, the search results of the COVID-19 pandemic were combined with those of family well-being.

2.3. Study Selection

Based on previous systematic reviews [13] [14] [15], family well-being included not only family health, happiness, and relations such as couple and parent-child relationships, intimate partner violence (IPV), child abuse and neglect (CAN), and family functioning, but also physical, mental, and social health, and quality of life (QOL) among family members such as family caregivers of patients, children, and older adults. Therefore, this study included the outcomes of both a family as a collective system and its individual members. The titles or abstracts of the relevant studies were screened, following which the full publications of the potentially eligible studies were considered. Studies were excluded if they met the following criteria: 1) not including an abstract, 2) published in non-English, 3) not focusing on the COVID-19 pandemic, 4) not focusing on family well-being, and 5) reviews, recommendations, comments, and editorials. The reference lists of the excluded review articles were inspected to identify additional studies. According to the scoping review methods of Arksey and O'Malley [11] and PRISMA-ScR [12], this review did not assess the methodological quality of the included studies.

3. Results

3.1. Flow of Literature Search and Description of Included Studies

A total of 923 articles were retrieved from MEDLINE and CINAHL databases

(**Figure 1**). Of these, 11 duplicates were excluded. The titles and abstracts of the remaining 902 articles were screened for eligibility, and 783 articles were excluded for the following reasons: 237 articles included no abstract, 39 were published in non-English, 25 did not focus on the COVID-19 pandemic, 465 did not focus on family well-being, and 17 were reviews, recommendations, comments, and editorials. The full publication of the remaining 119 articles was assessed for eligibility, and 94 articles were excluded for the following reasons: one did not focus on the COVID-19 pandemic, 81 did not focus on family well-being, and 12 were reviews, recommendations, comments, and editorials. There was no additional article found through screening the reference lists of the excluded review articles. Finally, 25 articles were included in this scoping review.

Twelve of the 25 identified studies targeted families of individuals with no diseases and disabilities [16] [27], four targeted families of COVID-19 patients and survivors [28] [29] [30] [31], four involved families of individuals with disabilities [32] [33] [34] [35], three included families of children with chronic diseases [36] [37] [38], and two targeted families of workers involved with COVID-19 patients [39] [40] (**Table 1**). Of the 25 identified studies, 17 used a cross-sectional quantitative design [16] [18] [19] [20] [21] [23] [25] [26] [31]-[36] [38] [39] [40], four used a longitudinal quantitative design [22] [27] [28] [37], two used a qualitative design [29] [30], and two involved mixed methods [17] [24]. Five of the studies were conducted in China [18] [27] [38] [39] [40], three each in the United States of America (USA) [20] [33] [34] and Hong Kong [23] [25] [26], two each in Iran [29] [30] and Switzerland [28] [37], and one each in Albania [21], Bangladesh [19], Brazil [36], Canada [16], Greece [35], Japan [22], Netherlands [24], Saudi Arabia [32], and Spain [17]. One study conducted an online survey around the world, mainly in Europe and North America [31].

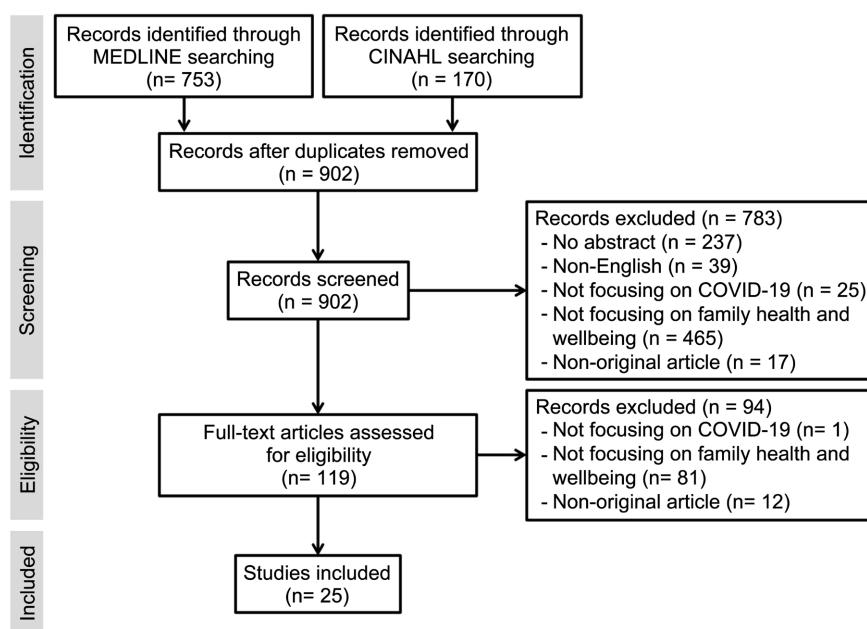


Figure 1. Flowchart of article extraction from the literature search.

Table 1. Overview of relevant studies on impacts of COVID-19 pandemic on family well-being.

Authors, country, and year	Design	Time of Study	Participants	Outcome	Measure	Key findings
Families of individuals with no disease and disability						
Gadermann <i>et al.</i> Canada 2021 [16]	Quantitative (cross-sectional)	During the COVID-19 pandemic (May 2020)	Parents with children aged < 18 years at home (N = 618)	Family Relations Mental Health	<ul style="list-style-type: none"> - Ad-hoc items about changes in parent-child relations due to COVID-19 - Ad-hoc items about changes in mental health due to COVID-19 pandemic 	<ul style="list-style-type: none"> - Parents often reported increases in both negative and positive parent-child interactions due to the COVID-19 pandemic. - Financial concerns, and stress that the COVID-19 pandemic caused mental health problems were related to both negative and positive interactions. - Parents with children at home were more likely to report deteriorated mental health (44%), and suicidal thoughts and self-harm (8%) since the onset of the COVID-19 pandemic than individuals with no children at home (35% and 2%, respectively).
Gunther-Bel <i>et al.</i> Spain 2020 [17]	Mixed methods	First 3 weeks of the lockdown (Mar-Apr 2020)	Adults aged ≥ 18 years with their partner and/or children (N = 407)	Family Relations	<ul style="list-style-type: none"> - Dyadic Adjustment Scale (for participants without children) - Basic Family Relations Evaluation Questionnaire (for participants with children) - Open-ended question about perceived changes in couple or family dynamics during lockdown 	<ul style="list-style-type: none"> - Participants without children reported comparable levels of couple relationships to the Spanish standardization sample during the lockdown. Participants with children reported comparable levels of parent-child relationships, but reported worse couple relationships during the lockdown. - Job loss related to COVID-19 and psychological distress had a negative impact on couple relationships among participants without children. Job loss related to COVID-19 had a negative impact, and telecommuting had a positive impact on couple relationships among participants with children. - In the qualitative data, 59% of participants reported perceived improvement in family relationships, 39% reported perceived deterioration, and 2% reported both, with the family connection and conflict atmosphere cited most often, respectively.

Guo <i>et al.</i> China 2021 [18]	Quantitative (cross-sectional)	During lockdown (Feb 2020)	Non-specific individuals (N = 24,188)	Family Relations	<ul style="list-style-type: none"> - Ad-hoc items about family closeness including remote and face-to-face communication with family and family activities such as playing games 	<ul style="list-style-type: none"> - Of participants, 63% reported more closeness with their families than before the pandemic (such as in network communication, face-to-face family activities, and playing games), while only 8% reported less closeness with their families. - Family closeness of participants was increased in areas where COVID-19 was more prevalent. Family closeness of participants with better neighborhood closeness was better than that of participants with worse neighborhood closeness.
Hamadani <i>et al.</i> Bangladesh 2020 [19]	Quantitative (cross-sectional)	During lockdown (May-June 2020)	Mothers or female guardians of children (N = 2417)	IPV Mental Health	<ul style="list-style-type: none"> - Items based on the WHO multi-country survey tool and specifically addressed emotional, physical, and sexual violence - Centre for Epidemiologic Studies-Depression Scale - Generalized Anxiety Scale 	<ul style="list-style-type: none"> - Compared to before the lockdown, more than half of Bangladeshi mothers with experiences of IPV reported that depressive symptoms, and emotional, physical, and sexual violence increased during the lockdown. - Of participants, 26% reported mild anxiety, 12% reported moderate anxiety, 1% reported severe anxiety, and 99% reported an increase in anxiety symptoms since the onset of the lockdown.
Kracht <i>et al.</i> USA 2021 [20]	Quantitative (cross-sectional)	During lockdown (May 2020)	Mothers of preschoolers (N = 1721)	Physical Health	<ul style="list-style-type: none"> - Godin-Shephard Leisure-time Physical Activity Questionnaire (physical activity) - Pittsburgh Sleep Quality Index (sleep disturbance) 	<ul style="list-style-type: none"> - Household chaos and stress were negatively related to physical activity and sleep among mothers of preschoolers. - Stress partially mediated the association of household chaos with physical activity and sleep among mothers of preschoolers.
Mechili <i>et al.</i> Albania 2021 [21]	Quantitative (cross-sectional)	After first 10 days of lockdown (Mar-Apr 2020)	Bachelor and master nursing students (N = 863) and their family members (N = 249)	Mental Health	<ul style="list-style-type: none"> - Patient Health Questionnaire-9 (depression) 	<ul style="list-style-type: none"> - Twenty six percent of family members with nursing students indicated moderate to severe symptoms of depression. - Family members who considered that COVID-19 and quarantine could cause problems on their health, reported elevated levels of depression.

Noguchi <i>et al.</i> Japan 2021 [22]	Quantitative (longitudinal)	Before (Mar 2020) and after (Oct 2020) lockdown	Family caregivers and non-family caregivers who were community- dwelling older adults aged ≥ 65 years (N = 957)	Mental Health	- Items about depression based on a previous study	- Family caregivers were more likely to have the incidence (having no depression symptoms before lockdown, but having them after lockdown) or persistence (having depression symptoms both before and after lockdown) of depressive symptoms than non-family caregivers. - Caregivers with increased burden during the lockdown experienced higher incidence or persistence of depressive symptoms.
Sit <i>et al.</i> Hong Kong 2021 [23]	Quantitative (cross-sectional)	During COVID-19 pandemic (May 2020)	Adults aged ≥ 18 years with one or more family members (N = 4890)	Family Health Family Happiness Family Relations	- Items about family health, harmony, and happiness based on a previous study - Ad-hoc items about increase in negative emotions among family members and family conflict	- Fear of COVID-19 was not associated with family happiness, family health, and family harmony, but was associated with increased family conflicts and negative emotions among family members.
Tierolf <i>et al.</i> Netherlands 2021 [24]	Mixed Methods	Before (Jan 2020) and during (Feb 2020) lockdown	Parents aged ≥ 18 years (N = 290) and children aged 3 - 18 years (N = 261) in the same families with high risk of IPV and/or CAN for quantitative study, and parents aged ≥ 18 years (N = 30) and children aged 3 - 18 years (N = 9) in the same families with high risk of IPV and/or CAN, and professionals (N = 13) for qualitative study	IPV CAN	- Conflict Tactics Scale-2 (IPV) - Conflict Tactics Scale Child-Parent (CAN) - Interview about impact of COVID-19 on family safety	- No difference was found in the frequencies and severities of IPV and CAN between families before and during the lockdown, but half of the families had frequent and serious violence (more than 22 incidents of IPV and/or CAN per year, and more than two incidents of mild and/or severe CAN, and/or severe IPV). - Most families stated that the COVID-19 pandemic often caused stress and tension in the family, further promoting IPV and CAN.

Wong <i>et al.</i> Hong Kong 2021 [25]	Quantitative (cross-sectional)	During COVID-19 pandemic (May 2020)	Adults aged ≥ 18 years with family members (N = 4891)	Family Health Family Happiness Family Relations	- Ad-hoc items about family physical health and family hygiene	- The prevalence of perceived benefits of COVID-19 on family physical health, mental health, and relations was 19%, 7%, and 14%, respectively. The most common perceived benefits were improved family hygiene in family physical health, increased family positive emotion in family mental health, and increased family's ability to cope with difficulties in family relations.	
					- Ad-hoc items about family mental health including family negative and positive emotion, and family happiness		- The prevalence of perceived harms of COVID-19 on family physical health, mental health, and relations were 2%, 38%, and 19%, respectively. The most commonly perceived harms were poorer family physical health, increased family negative emotion in family mental health, and decreased family harmony in family relations.
					- Ad-hoc items about family relations including family harmony and family's ability to cope with difficulties		
Wong <i>et al.</i> Hong Kong 2020 [26]	Quantitative (cross-sectional)	During COVID-19 pandemic (Apr 2020)	Adults aged ≥ 18 years (N = 1501)	Family Health Family Happiness Family Relations	- Items about family health, harmony, and happiness based on a previous study	- Personal preventive behaviors such as washing hands and wearing mask were positively related to family happiness, family health, and family harmony.	
Xie <i>et al.</i> China 2021 [27]	Quantitative (longitudinal)	Before (Mar–Dec 2019) and during (Jan–Aug 2020) COVID-19 pandemic	Pregnant women (N = 2657 before the pandemic and N = 689 during the pandemic)	Family Functioning Physical Health Mental Health	- Symptom Check List-90 Revised (depression, anxiety, and somatization)	- Pregnant women during the COVID-19 pandemic reported lower levels of family cohesion and higher levels of conflict and independence compared to before the pandemic.	
					- Pittsburgh Sleep Quality Index (Sleep disturbance)	- Pregnant women during the COVID-19 pandemic were more likely to report sleep disturbance, depression, anxiety, and somatization, compared to before the pandemic.	
					- Family Environment Scale (Family Functioning)	- Family cohesion was a protective factor for depression, anxiety, and somatization, whereas family conflict was a risk factor.	
Families of COVID-19 patients and survivors							
Beck <i>et al.</i> Switzerland 2021 [28]	Quantitative (longitudinal)	During COVID-19 pandemic (Mar–Jun	COVID-19 patients after hospital discharge	Mental Health	- Hospital Anxiety and Depression Scale (anxiety and depression)	- Of the relatives of COVID-9 patients, 16% had moderate symptoms of anxiety and 15% had moderate symptoms of depression.	

		2020)	(N = 126) and their closest relatives (N = 153)		- Impact of Event Scale-Revised (posttraumatic stress disorder)	- Death of patients and perceived burden due to COVID-19 such as risk of infection and separation from patients were related to moderate symptoms of anxiety and/or depression among relatives.
Mohammadi <i>et al.</i> Iran 2021 [29]	Qualitative (content analysis)	During COVID-19 pandemic (Feb–May 2020)	Family members with individuals who died from COVID-19 (N = 16)	Family Relations Mental Health Social Health	- Interview on experiences of bereavement among family members	- Participants described that death of a family member (especially a father) had a very adverse effect on the stability of the family. - They felt guilt that they may have transmitted coronavirus to their families and caused the death of their loved ones. - People were terrified of interacting with the families of COVID-19 victims and would rather stay away from them. They were stigmatized and labeled after the death of their loved family member. - Caring for a patient with COVID-19 improved the relationship between family caregivers and patients. The experience of living with and caring for patients increased their interest in each other, and they appreciated each other during the pandemic. - Some family caregivers reported experiencing physical problems such as fatigue, sleep disturbances, anorexia, and allergies caused by overuse of disinfectants. Fatigue and insomnia were the most commonly reported physical symptoms.
Rahimi <i>et al.</i> Iran 2021 [30]	Qualitative (Phenomenology)	During COVID-19 pandemic (Jun–Aug 2020)	Family caregivers caring COVID-19 patients at home (N = 13)	Family Relations Physical Health Mental Health Social Health	- Interviews on caring experiences of family caregivers	- Family caregivers described the COVID-19 pandemic as difficult and terrifying. They experienced fear, anxiety, worry, sadness, hopelessness, and mental preoccupation about patients’ progress, and felt powerless to manage their symptoms. - Family caregivers encountered negative reactions from healthy people in the community, and felt socially rejected and deprived because healthy people thought that caregivers may be carriers of COVID-19, avoiding to contact them. Moreover, they were home alone with the patient, which made them feel lonely.

Shah <i>et al.</i> Europe and North America etc. 2021 [31]	Quantitative (cross-sectional)	During COVID-19 pandemic (Jun–Aug 2020)	COVID-19 survivors after average 13 weeks since COVID-19 symptoms started (N = 735) and their partners (N = 571) or family members (N = 164) aged ≥ 18 years	QOL	- Family Reported Outcome Measure	- Partners and family members reported that the poor dimension of the Family Reported Outcome Measure measuring their QOL was feeling worried, followed by the dimension of family activities, frustration, holiday, and sex life. - Partners and family members with a COVID-19 history experienced a greater impact on eating habits, work and study, family activities, holiday, sex life, and sleep than those with no history.
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Families of individuals with disabilities

Alhuzimi Saudi Arabia 2021 [32]	Quantitative (cross-sectional)	During COVID-19 pandemic (Jun 2020)	Parents of children with autism spectrum disorder (ASD) aged ≤ 18 years (N = 150)	Mental Health	- Parent Stress Index Short Form (parenting stress) - General Health Questionnaire-12 (psychological distress)	- Of parents, 94% reported that parenting stress increased, and 79% reported that psychological distress was impacted due to the present COVID-19 situation. - More severe ASD behaviors in comparison to the pre-COVID-19 status increased parenting stress and psychological distress, while a higher frequency and usefulness of ASD support decreased parenting stress and psychological distress.
Beach <i>et al.</i> USA 2021 [33]	Quantitative (cross-sectional)	During COVID-19 pandemic (Apr–May 2020)	Family caregiver of individuals with physical and cognitive/ memory problems, and behavioral, emotional, or developmental disorder (N = 576) and non-family caregivers (N = 2933)	Physical Health Mental Health Social Health	- Patient-Reported Outcomes Measurement Information System short forms (anxiety, depression, fatigue, sleep disturbance, and social participation)	- Family caregivers reported more anxiety, depression, fatigue and sleep disturbance, and less ability to participate in social activities than non-family caregivers. - Family caregivers who reported a greater impact of COVID-19 on their caregiving had more anxiety, depression, fatigue and sleep disturbance, and less social participation than family caregivers who reported less impact.

Manning <i>et al.</i> USA 2020 [34]	Quantitative (cross-sectional)	During COVID-19 pandemic (Mar–May 2020)	Individuals with autism spectrum disorder (ASD) aged ≥ 20 years (N = 12) and their family members (N = 459)	Mental Health	- Ad-hoc item about stress in families caused by the COVID-19 restrictions	<ul style="list-style-type: none"> - Family members of individuals with ASD had high levels of stress caused by COVID-19 restrictions. - Family members reported the following stressors: worry about an individual with ASD being home all the time (55%), concern about becoming ill or an individual with ASD becoming ill (52%), financial difficulties (31%), worry about lack of care other than myself for an individual with ASD (22%), and separation from an individual with ASD (5%). - ASD severity increased stress caused by COVID-19 restrictions among family members.
Tsibidaki Greece 2021 [35]	Quantitative (cross-sectional)	Second and third week of lockdown (Mar–Apr 2020)	University students (N = 26) and parents (N = 35) in families with one or more members with special educational needs and disability	Mental Health	- State-Trait Anxiety Inventory (anxiety)	<ul style="list-style-type: none"> - Parents reported higher levels of state anxiety and resilience, and reported lower levels of trait anxiety than university students. - Higher levels of self-efficacy and resilience improved state and trait anxiety among both university students and parents.
Families of children with chronic diseases						
Alessi <i>et al.</i> Brazil 2021 [36]	Quantitative (cross-sectional)	During social distancing for high-risk group for COVID-19 (May–Jun 2020)	Family caregivers of children with type 1 diabetes aged ≤ 18 years (N = 381) and parents of children without diabetes (N = 383)	Mental Health	<ul style="list-style-type: none"> - Self-Reporting Questionnaire (mental health disorders) - Ad-hoc items about pandemic-related emotional burden and diabetes-specific emotional burden related to diabetes care 	<ul style="list-style-type: none"> - The proportion of having mental health disorders during social distancing was higher in family caregivers of children with type 1 diabetes aged < 12 years compared to those of children without diabetes aged < 12 years. - Family caregivers of children with type 1 diabetes reported more pandemic-related emotional burden compared to family caregivers of those without diabetes. - Regarding psychological burden related to diabetes care among family caregivers of children with type 1 diabetes, 41% reported discontent in care sharing, 36% reported discontent in support, 42% reported discontent in appreciation, 48% reported exhaustion, and 76% reported guilt problems.

Ehrler <i>et al.</i> Switzerland 2021 [37]	Quantitative (longitudinal)	Before (Jan 2013–Mar 2020) and during (Apr–May 2020) COVID-19 pandemic	Parents of typically developing children (N = 73), and children born very preterm (N = 54), and children with congenital heart diseases (N = 73)	Family Functioning	- Family Relationship Index	- Family functioning reported by parents during the COVID-19 pandemic was lower in comparison to before the pandemic, independent of group (parents of typically developing children, and children born very preterm, and children with congenital heart disease) and family socioeconomic status. - Family cohesion and expressiveness during the COVID-19 pandemic were lower than those before the pandemic, but there was no difference in family conflicts during and before the COVID-19 pandemic.
Zhao <i>et al.</i> China 2020 [38]	Quantitative (cross-sectional)	During COVID-19 pandemic (Feb 2020)	Family caregivers of children with kidney failure on long-term kidney replacement therapy aged ≤ 18 years (N = 220)	Mental Health	- General Anxiety Disorder Scale (anxiety) - Patient Health Questionnaire-9 (depression)	- Of family caregivers, 11% (15% and 7% of family caregivers of children with dialysis and kidney transplant, respectively) had anxiety symptoms, and 13% (18% and 8% of family caregivers of children with dialysis and kidney transplant, respectively) had depressive symptoms.
Families of workers involved COVID-19 patients						
Feng <i>et al.</i> China 2020 [39]	Quantitative (cross-sectional)	During COVID-19 pandemic (Feb 2020)	Family members of front-line rescue workers (N = 671)	Physical Health Mental Health	- Generalized Anxiety Disorder-7 (anxiety) - Patient Health Questionnaire-2 (depression) - Primary Care Posttraumatic Stress Disorder Screen for DSM-5 (posttraumatic stress) - Items extracted from Patient Health Questionnaire-9 (sleep disturbance and suicidal thought)	- Of the family members, 55% reported sleep disturbance, 49% had mild or more anxiety symptoms, 12% reported clinically significant depression symptoms, 10% might have posttraumatic stress, and 8% had suicidal thoughts. - Family members who were more worried about the safety of front-line rescue workers had sleep disturbance and more posttraumatic stress than those who were less worried. - Family members who were more worried about physical condition of front-line rescue workers had sleep disturbance and more depressive symptoms than family members who were less worried. - Family members who were more

Ying <i>et al.</i> China 2020 [40]	Quantitative (cross-sectional)	During COVID-19 pandemic (Feb 2020)	Family members of healthcare workers (N = 845)	Mental Health	worried about the supplies of front-line rescue workers had sleep disturbance, more anxiety and depressive symptoms, posttraumatic stress, and suicidal thoughts than those who were less worried.
					<ul style="list-style-type: none">- Family members who had a greater impact of front-line working on their daily life and caring for children as well as elderly reported sleep disturbance, more anxiety and depressive symptoms, posttraumatic stress, and suicidal thoughts than family members who had less impact.- The prevalence of anxiety and depression symptoms was 34% and 29% among family members of healthcare workers, respectively.- Risk factors for anxiety symptoms included more time (hours) spent thinking about COVID-19, and whether healthcare workers had direct contact with confirmed or suspected COVID-19 patients; a protective factor included the use of effective protective equipment by healthcare workers.- Risk factors for depressive symptoms included more time (hours) spent thinking about COVID-19 and longer average working time per week for healthcare workers.

Three studies focused on family health [23] [25] [26], two on family happiness [25] [26], eight on family relations [16] [17] [18] [23] [25] [26] [29] [30], two on family functioning [27] [37], and two on IPV and/or CAN [19] [24]. In addition, five studies focused on family caregivers' physical health [20] [27] [30] [33] [39], 16 on family caregivers' mental health [16] [19] [21] [22] [27] [28] [29] [30] [32] [33] [34] [35] [36] [38] [39] [40], three on family caregivers' social health [29] [30] [33], and one on family caregivers' QOL [31].

3.2. Family Health and Happiness

All studies exploring family health and happiness were conducted in Hong Kong [23] [25] [26]. In the study by Wong *et al.* [25], families perceived certain benefits of COVID-19 in terms of physical health (e.g., improved family hygiene and

improved family physical health), and harm to mental health (e.g., increased family negative emotion and decreased family happiness). In the studies by Sit *et al.* and Wong *et al.* that used the same items about family health and happiness, fear of COVID-19 was negatively associated [23], and personal preventive behaviors such as washing hands and wearing masks were positively associated with perceived family health and happiness among family members in Hong Kong [26].

3.3. Family Relations

Families reported that while family and parent-child relationships worsened during the COVID-19 pandemic, they also improved in certain instances [16] [17] [18] [25], with families reporting improved family relationships rather than worsened ones in some studies [16] [25]. Members of families that engaged in personal preventive behaviors perceived that their families were more harmonious than those who did not [26]. Telecommuting was associated with couple relationships in Spanish families [17]. In contrast, job loss and financial concerns caused by the COVID-19 pandemic, fear of infection with COVID-19, and stress that the pandemic exacerbates an existing mental health problem, worsened couple, parent-child, and family relationships (e.g., increased harsh words, conflicts and yelling/shouting) [16] [23].

Two qualitative studies exploring family relationships among families of Covid-19 patients were conducted in Iran [29] [30]. When family caregivers lived with and provided care to COVID-19 patients, they became more interested in and appreciative of each other [30]. Family members described that the death of a member, especially a father, had a very adverse effect on the stability of their family [29].

3.4. Family Functioning

Compared to before the pandemic, Chinese pregnant women reported less family cohesion and more family conflicts and independence during COVID-19 [27]. Similarly, family cohesion and expressiveness during the COVID-19 pandemic was lower than before among parents with typically developing children, children born very preterm, or children with congenital heart diseases in Switzerland [37].

3.5. IPV and CAN

No difference was found in the frequencies and severities of IPV and CAN before and during the lockdown among families with high risk of IPV and/or CAN in the Netherlands, but half of them reported frequent and serious violence during the containment [24]. Compared to before the lockdown, more than half of Bangladeshi mothers with experiences of IPV reported that emotional, sexual, and physical (moderate and severe) violence increased during the confinement [19].

3.6. Family Members' Physical Health

Chinese pregnant women reported sleep disturbance more frequently during the COVID-19 pandemic than before it [27]. Household chaos and stress related to the lockdown were negatively related to sleep time and physical activities among parents of preschoolers in the USA [20].

Family members providing care for COVID-19 patients at home reported sleep disturbance and fatigue as the most common physical problems [30]. Family caregivers of individuals with disabilities had more fatigue and sleep disturbance than non-family caregivers, and these symptoms worsened with increased caregiving burden related to COVID-19 [33].

More than half of the Chinese family members of front-line rescue workers had sleep disturbance with increased worry regarding the workers' physical condition and access to supplies; a greater impact of front-line work on their daily lives was associated with more sleep disturbance [39].

3.7. Family Members' Mental Health

The COVID-19 pandemic and the subsequent lockdown increased psychological problems such as depression, anxiety, and somatic symptoms among pregnant women, and parents with infants or children aged < 18 years at home [16] [19] [27]. Among family members with nursing students, 26% indicated moderate to severe symptoms of depression after the first 10 days of lockdown associated with COVID-19 [21]. Eight percent of parents with children aged < 18 years at home reported suicidal ideation or self-harm during the pandemic, which was at a higher proportion than for parents without children at home (2%) [16]. Parenting for children, alongside caregiving and its increased burden for older adults during COVID-19 aggravated parents' and family caregivers' mental health [16] [22]. The belief that COVID-19 and the lockdown phase increased health problems influenced the worsening of depression among family members of nursing students [21]. Family cohesion perceived by pregnant women decreased their anxiety, depression, and somatization symptoms, while family conflict increased the perception of these symptoms [27].

Qualitative studies found that family members who had COVID-19 patients or experienced their deaths, described COVID-19 as difficult and terrifying, feeling fear, anxiety, worry, sadness, and hopelessness; they also reported negative preoccupation about patients' progress, feeling powerless to manage their symptoms and guilt that they may have transmitted the virus to their families, causing their deaths [29] [30]. Sixteen percent of family members with COVID-19 patients had anxiety, and 15% had depression [28]. The burden associated with COVID-19, such as the risk of infection and isolation from patients, and their death increased depression and anxiety [28].

Family members of individuals with disabilities reported aggravation of depression, anxiety, parenting stress, and psychological distress due to the COVID-19 pandemic and its subsequent lockdown [32] [33] [34] [35]. Increased severity of disabilities [32] [34], caregiving burden [33], and lack of support [32] for in-

dividuals with disabilities were negatively related to mental health. In addition, during the COVID-19 pandemic and its subsequent lockdown, family caregivers of children with type 1 diabetes or kidney failure reported depression, anxiety, and pandemic-related emotional burden (e.g., feeling worried and afraid of being infected with the virus) [36] [38].

Among family members of workers involved with COVID-19 patients, 34% - 49% reported anxiety, 12% - 29% reported depression, 10% reported posttraumatic stress, and 8% reported suicidal ideation [39]. Worries about the safety and physical condition of workers, lack of supplies for workers, a greater impact of their job on their daily life, more time spent thinking about COVID-19, and longer working time of workers deteriorated psychological problems among family members [39] [40].

3.8. Family Members' Social Health

Family caregivers who had COVID-19 patients or experienced their deaths described that healthy people in the community were terrified of interacting with them, and would rather stay away from them, making them feel socially rejected and lonely [29] [30].

During the pandemic, family caregivers of individuals with disabilities reported less ability to participate in social activities than non-family caregivers. Those who reported a greater impact of COVID-19 on their caregiving also had less social participation than family caregivers who reported less impact [33].

3.9. Family Members' QOL

Partners and family members of COVID-19 survivors reported that the poor dimension of the Family Reported Outcome Measure measuring their QOL was feeling worried, followed by the dimension of family activities, frustration, holiday, and sex life [31]. Partners and family members with a COVID-19 history experienced a greater impact on eating habits, work and study, family activities, holiday, sex life, and sleep than those with no history.

4. Discussion

This scoping review provides an overview of the current state of knowledge regarding the impact of the COVID-19 pandemic on family well-being. Twenty-five studies included in this review covered a variety of families, regardless of whether they had diseases and disabilities, and examined the association of COVID-19 with the health and well-being of whole families as well as individual members. This review suggested that due to the COVID-19 pandemic, families concurrently perceived deterioration of family relationships and experienced poor family functioning, and an increase in IPV and CAN. Family members also reported an impairment in physical, mental, and social health due to the pandemic, with an increase in caregiving burden for family members being negatively associated with physical, mental, and social health among family members.

Moreover, the work environment and condition of workers involved with Covid-19 patients worsened their family members' physical, mental, and social health.

From the viewpoint of the family systems theory [9], pandemic-related changes in a society as the higher system and a family member as the lower system would affect a family. Decline in economic activities due to COVID-19 could lead to job loss of family members, subsequently worsening the family's economic status. In addition, encouragement of telework and the closing of schools could make family members spend more time together at home, potentially altering the roles each individual plays in their families. Since family members of COVID-19 patients experienced isolation and bereavement, their family structure could change. Such changes in the family's internal system would negatively affect family relationships (e.g., conflicts and tension among family members) and family functioning (e.g., lower family cohesion), which may result in increased IPV and CAN.

The COVID-19 pandemic and its subsequent lockdown deteriorated interactions between family members and the community, such as health care providers and neighbors. This reduced exchange of information and support between family members and their community, indicating reduced permeability at the boundaries of the family system [41]. A closed family system, which implies low permeability at the boundaries of the family system, would make it more difficult to introduce support into a family during the COVID-19 pandemic, as compared to before it. Strategies maintaining an open family system are therefore needed to improve family relationships, functioning and happiness, even during a pandemic.

The COVID-19 pandemic is considered a CBRNE disaster, and its impact on individual mental health has received attention [4] [5] [8]. In this scoping review, the largest number of studies revealed a negative impact of COVID-19 on family members' mental health [16] [19] [21] [22] [27] [28] [29] [30] [32] [33] [34] [35] [36] [38] [39] [40]. In addition, caregiving for family members, and its increased burden due to COVID-19, were negatively associated with family caregivers' mental health [16] [22] [33] [39]. During the outbreak of an infectious disease, family members in caregiving roles would be at high risk for the deterioration of their mental health, requiring psychosocial support. Moreover, complex grief and posttraumatic stress were reportedly associated with poor social health in adults who lost a loved one infected with COVID-19, such as friends [42]. Thus, the deterioration of family members' mental health may spill over to poor physical and social health. Therefore, preventing deterioration in family members' mental health may be the first step in maintaining family well-being.

The families of workers involved with COVID-19 patients also had poor mental health [39] [40]. In addition, workplace environments and the health status of these workers affected their family members' physical, psychological, and social health [39] [40]. A CBRNE disaster has negative impacts on the health care system, such as shortage of human resources and supplies, which would place the

workers involved with COVID-19 patients in harsh working conditions, compromising their health [6] [7]. Thus, appropriate allocation of medical resources by a government and monitoring condition of workers involved with COVID-19 patients by medical institutions could improve health condition of both workers and their family members.

This scoping review had some limitations. First, most studies included in this review conducted cross-sectional quantitative and qualitative research, while few used longitudinal quantitative research. This study insufficiently indicated evidence of the impact of the COVID-19 pandemic on family well-being. Second, the studies included in this review targeted a variety of families and investigated many types of outcomes on family well-being. Moreover, these studies were conducted in countries with different policies to prevent the COVID-19 pandemic and a variety of medical and social welfare systems. This made it difficult to compare the results of each study. Finally, all studies in this review were conducted in 2020, demonstrating only short-term effects of the pandemic on family well-being. Therefore, the long-term impact of COVID-19 on family well-being should be investigated in future research.

In conclusion, this scoping review suggested that the COVID-19 pandemic and its subsequent lockdown were negatively associated with family well-being, including family relations and their mental and physical health, among various types of families. Considering a future pandemic of infectious disease, nurses need to develop strategies to maintain families' open systems during lockdowns and social distancing measures, while improving family members' mental health.

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Authors' Contributions

The author (TS) conceptualized and designed the study, screened the literature for inclusion and exclusion, qualitatively synthesized the results of eligible literature, and interpreted the study findings. The author also drafted and critically reviewed the manuscript, approved the final version of the manuscript, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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