

ORIGINAL RESEARCH

# Home Health Care During Physical Distancing Affects Physical and Psychosocial Aspects, Self-Efficacy, Family Function, and Quality of Life of Families in Indonesia



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## Abstract

**Background:** Physical distancing during the COVID-19 pandemic has impacted the activities of daily living (ADLs) of families, such as physical and psychosocial aspects, self-efficacy, family social function, and overall quality of life. However, research investigating the effects of home health care in enhancing these aspects during the physical distancing period remains limited.

**Purpose:** This study aimed to evaluate the effects of implementing home health care on physical and psychosocial aspects, self-efficacy, family social function, and quality of life of families in East Java Province, Indonesia.

**Methods:** A quasi-experimental study was conducted among 768 healthy families that were purposively recruited from April to May 2020. The home health care program was implemented for one month to provide nursing care to the families. Data were collected using self-administered questionnaires, and SPSS software was employed for data analysis. Chi-square tests were applied for categorical variables, while paired t-tests were used for continuous variables.

**Results:** Significant differences were observed in blood pressure, pulse, and temperature before and after the implementation of home health care during the physical distancing period ( $p < 0.05$ ). There was an increase in body mass index (23.29(5.59) vs. 23.78(7.53);  $p = 0.001$ ). Notably, significant differences were also found in COVID-19 exposure risk factors, personal risk factors, sleep patterns, and physical activity before and after home health care ( $p < 0.05$ ). Furthermore, improvements were noted in self-efficacy, family social function, and the quality of life of the families after one month of home health care ( $p < 0.05$ ).

**Conclusion:** Home health care during physical distancing positively affected the physical and psychosocial aspects, self-efficacy, family social function, and quality of life of the families. Thus, the guidance and support offered through home health care should be further developed to help families navigate the “new normal” era of COVID-19.

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## 1. Introduction

The World Health Organization (WHO) reported the number of COVID-19 cases worldwide as 234,073, including 24,247 new cases, 9,840 deaths, and 1,061 new deaths (WHO, 2020a). Meanwhile, the number of COVID-19 in Indonesia based on the Ministry of Health's reports included 450 positive cases and 38 deaths (Ministry of Health Republic of Indonesia, 2020). This indicates a significant increase in the number of COVID-19 cases through transmission from positive patients to healthy people in the community. Thus, stringent control measures are required to prevent the spread of COVID-19 among healthcare providers in hospitals and their patients, especially among suspected patients in the community and within families.

To prevent the spread of COVID-19, a physical distancing program is implemented to maintain a distance of around two meters between individuals. COVID-19 spreads mainly among people who are in close contact (within about 6 feet) for a long time (WHO, 2020b). The government implements work-from-home or study-from-home to maintain physical distancing.

Research has shown that people who are infected, although they have no symptoms, may also play a role in the spread of COVID-19 (WHO, 2020c). However, until now, there has been a lot of controversy from families and communities regarding the program to maintain distance during the physical distancing period.

The WHO's second pillar, Risk Communication and Community Engagement, underscores the importance of effectively communicating COVID-19 risks and precautions to ensure the safety and welfare of families. In this regard, home healthcare providers play a crucial role in educating families to adopt behaviors that reduce transmission risks when caring for infected members. Effective communication and active family involvement can increase trust between providers and families, ensuring that care is provided safely and empathetically while maintaining activities of daily living (ADLs) (WHO, 2020d). Also, during the physical distancing period, families and communities still lack awareness about the need to remain at home. This lack of awareness stems from insufficient knowledge about the risk factors and transmission of COVID-19. Consequently, families and communities lack an understanding of appropriate actions during this physical distancing period (WHO, 2020d). Meanwhile, to avoid and prevent the spread of COVID-19, it is necessary to increase individual immunity, personal and environmental hygiene, adequate nutrition, optimal physical activity, stress management, and avoid risk exposures (WHO, 2020a; WHO, 2020b; WHO, 2020c).

During COVID-19 physical distancing, families face challenges affecting self-efficacy, family function, and both physical and psychosocial aspects of their quality of life. Greater COVID-19-related stress is linked to lower self-efficacy, while increased engagement in family routines during the pandemic is associated with higher self-efficacy (Meyer et al., 2022). Self-efficacy also positively maintains optimism and mental health (Zhou et al., 2021), mediating the stressful effects of COVID-19 beliefs (Meyer et al., 2022). Families experience fear, uncertainty, and stress, leading to significant changes in financial, emotional, and physical wellbeing (Zhou et al., 2021). Positive and negative COVID-19-related events impact family functioning, with declines in youth's reported open family communication and increases in parent functioning (Meyer et al., 2022). Additionally, the pandemic is significantly associated with intergenerational communication and satisfaction with social support (Stawnychy et al., 2023). This has impacted family employment, financial security, mental health, children's education, and overall wellbeing, leading to family income loss, economic difficulties, job loss, and increased stress and anxiety (Gayatri & Puspitasari, 2023).

Families require an effective adaptation pattern during physical distancing, necessitating active involvement from each family member to bolster family functioning and strength (Susanto, 2012) in fulfilling their activities of daily living, both physical and psychosocial aspects. Simultaneously, home health and personal home care organizations can implement a highly coordinated and consistently communicated approach to infection control, case identification, and employee screening (Mills et al., 2020). The management of ADLs, including aspects such as nutrition (Laviano et al., 2020), physical activity (Jakobsson et al., 2020), rest and sleep (Gulia & Kumar, 2020), and stress management (Cao et al., 2020), is essential for families during the COVID-19 pandemic within both family and community-based healthcare (Victoria et al., 2020a; Victoria et al., 2020b). However, maintaining these ADLs during physical distancing poses a significant challenge for families. Research has shown that optimizing family care through home health care facilitates self-efficacy (Moghadam et al., 2016) and enhances the family's overall quality of life (QOL) (Han et al., 2013; Peters et al., 2019). Home health care is designed to enhance a patient's health status, including physical activity, psychosocial wellbeing, self-efficacy, family social functioning, and overall family quality of life (Susanto et al., 2023). Health professionals can provide home health care to assist families in managing their ADLs.

While studies advocate the importance of family-based healthcare in optimizing self-efficacy and quality of life (Han et al., 2013; Moghadam et al., 2016; Peters et al., 2019), little research has focused on evaluating home healthcare's impact on physical and psychosocial aspects, self-efficacy, family function, and quality of life during the physical distancing period, particularly in East Java, Indonesia. Therefore, this study aimed to evaluate the effects of home health care on the physical and psychosocial aspects, self-efficacy, family function, and quality of life of families during the COVID-19 physical distancing period.

## 2. Methods

### 2.1. Research design

A quasi-experimental study with a pre-and post-intervention design without a control group was conducted among 768 healthy families in East Java, Indonesia, from April to May 2020.

### 2.2. Setting and samples

This study was conducted in the communities in Jember, Indonesia. A purposive sampling method was used to select the study participants that met the inclusion criteria. These subjects were the heads of the families of internship students, while other subjects included neighbors residing within approximately one kilometer of the internship students' houses. The heads of these families worked from home during the physical distancing period, and all family members were in good health and willing to participate. Exclusion criteria included individuals suspected or confirmed positive for COVID-19, those moving to another residence outside their town, and those with COVID-19 comorbidities (including the elderly, pregnant women, and individuals with non-communicable diseases such as hypertension, diabetes, heart diseases, and stroke).

During the COVID-19 pandemic, conducting community-based research posed significant challenges. In this study, subject selection was initiated through the student interns enrolled in the faculty of nursing at a public university in Jember, Indonesia. In April 2020, 91 student interns participated, with 455 families; in May 2020, 63 students participated, with 315 families. However, two families were excluded from the study due to relocation, resulting in a total of 768 families. The families participated in the home health care program for one month.

### 2.3. Intervention

Home health care was implemented for one month. Each family was supervised twice per week for one month. Therefore, eight home visits were conducted. During one month, each family received health education through teaching and practicing how to fulfill their ADLs during physical distancing at home by learning the module. The module encompassed content on ADL subjects, including the risk factors associated with COVID-19, nutrition, physical activity, sleep and rest, management of stress and loneliness, and psychosocial and spiritual needs (Table 1).

**Table 1.** Topics of module for health education during home health care visit

Topics	Sub Topics	Session
COVID-19 and risk factors	<ul style="list-style-type: none"> <li>• Explanation of COVID-19</li> <li>• General risk factors of COVID-19</li> <li>• Personal risk factors of COVID-19</li> </ul>	1
Nutrition	<ul style="list-style-type: none"> <li>• Fulfillment of nutrition to improve immunity</li> <li>• Planning daily menus with calories, protein, minerals, and fiber</li> </ul>	2
Physical activity	<ul style="list-style-type: none"> <li>• Arrangement of physical exercises at home</li> <li>• Practicing physical exercise for 15-30 minutes every day at home for stretching</li> </ul>	3
Personal and environmental hygiene	<ul style="list-style-type: none"> <li>• Practicing hand-washing techniques and proper mask-wearing</li> <li>• Bathing and changing clothes after work or being outside of the home</li> <li>• How to clean home and maintain healthy sanitation</li> </ul>	4
Sleep and rest	<ul style="list-style-type: none"> <li>• Maintaining sleep and rest at home</li> <li>• Practicing relaxation to stimulate deep sleeping</li> </ul>	5
Psychological	<ul style="list-style-type: none"> <li>• Maintaining stressors during COVID-19</li> <li>• Anger and stress management</li> </ul>	6
Social relationship	<ul style="list-style-type: none"> <li>• Maintaining quality time by scheduling family time to share the daily experiences of each family member</li> <li>• How to make social contact with neighbors</li> <li>• Defining family role during social distancing</li> </ul>	7
Spiritual	<ul style="list-style-type: none"> <li>• Praying and worship during the COVID-19 pandemic</li> <li>• How to use the house for worship and religious activities together during COVID-19</li> </ul>	8

The internship students were supported in teaching one topic during each home visit with the family and providing supervised practice sessions, where the internship students could apply the intervention under the guidance of experienced mentors. This allowed for feedback and refinement of techniques and ensured consistency in the intervention delivery.

The module was developed by the investigator team regarding clustering to accelerate the handling of COVID-19 in Indonesia during the physical distancing period (COVID-19 Handling Acceleration Group, 2020), along with standards for managing ADLs during the COVID-19 pandemic (Razi et al., 2020). Each health education session lasted for 60 minutes. Throughout the home health care program, the internship students followed a standardized protocol when contacting families, which included hand-washing before and after interacting with families and wearing masks or face shields. Participants' blood pressure, pulse, and temperature were measured during every visit to monitor their daily health status. Additionally, they completed a self-administered questionnaire at the initial home visit before the first session and after the final session of health education to evaluate their physical and psychosocial aspects, self-efficacy, family function, and quality of life.

The internship students underwent a comprehensive training program encompassing orientation on COVID-19 handling and clustering methodologies, health education curriculum instruction, communication skills, and monitoring procedures. Emphasis was placed on the consistent use of personal protective equipment, adherence to standardized protocols during home visits, and the accurate administration of self-administered questionnaires. Continuous supervision and feedback, along with mock sessions, ensured that students were well-prepared and shared similar perceptions about the intervention, contributing to a cohesive and effective implementation of the home health care program in Indonesia.

#### *2.4. Measurement and data collection*

Self-administered questionnaires were employed to collect sociodemographic information about the subjects and assess their physical and psychosocial aspects, self-efficacy, family social function, and quality of life (QoL). Sociodemographic data included age, gender, religion, ethnicity, education, marital status, occupation, and family income.

Regarding the physical aspects, the participants' blood pressure, pulse, temperature, height, and weight were measured. Blood pressure was assessed by standard protocol with a stethoscope and sphygmomanometer, and body temperature was measured with a standard thermometer. Weight (kg) and height (m) were used to calculate Body Mass Index (BMI). Also, risk factors for COVID-19 exposure were evaluated through 15 items, categorized into three groups (low risk=0-5, moderate risk=6-10, and high risk=11-15). Personal risk factors for COVID-19 were assessed with 21 items, categorized into three groups (low risk=0-7, moderate risk=8-14, high risk=15-21). Physical activity was measured using the International Physical Activity Questionnaire (IPAQ), consisting of 7 items with three categories: low, moderate, and high (Craig et al., 2003). This instrument was translated into Indonesian by Dharmansyah and Budiana (2021). Furthermore, sleep patterns were assessed using the Indonesian version of the Pittsburgh Sleep Quality Index (Setyowati & Chung, 2020) and categorized into two groups (good  $\leq 5$ , poor  $> 5$ ).

Psychosocial aspects, including loneliness, coping strategies, and family social function, were also assessed in participants. The Indonesian version of the UCLA Loneliness Scale version 3 (Nurdiani, 2019) was utilized, comprising 20 items and categorized into four groups (no loneliness=20-34, mild=35-49, moderate=50-64, and severe=65-80). Coping strategies were evaluated using the Indonesian version of the Jalowiec Coping Scale (JCS) (Ibrahim et al., 2021; Rafiyah et al., 2011), categorized into three groups (high  $\geq 63$ , moderate=38-62, low  $< 37$ ). Family social function was measured with the APGAR Family Scale (Smilkstein, 1978) and categorized into three groups (mild=8-10, moderate=4-7, and severe=0-3). The Indonesian version of the APGAR Family Scale (Ridwan et al., 2022) was employed. Additionally, participants' spiritual activity was assessed using the Indonesian version of the Daily Spiritual Experience Scale (DSES) (Karomah, 2015) and categorized into three groups (low=15-40, moderate=41-65, and high=66-90).

Furthermore, the General Self-Efficacy Scale (GSES), developed by Schwarzer and Jerusalem (1995), was used to measure the family's self-efficacy during physical distancing and categorized into three groups (low=13-26, moderate=27-40, and high  $> 40$ ). The Indonesian version of the GSES (Lidya, 2020) was used. Lastly, the Indonesian version of the WHOQOL-BREF was used to

evaluate the family's quality of life (Anisah & Djuwita, 2019; Saputri et al., 2020), categorized into five groups (very poor=0-20, poor=21-40, moderate=41-60, good=61-80, very good=81-100).

All translated versions of the instruments in Indonesian demonstrated strong validity and reliability. The Indonesian adaptation of the IPAQ exhibited satisfactory validity, with each item showing a factor loading between 0.890 and 0.995 and a Cronbach's alpha coefficient of 0.884 (Dharmansyah & Budiana, 2021). The Pittsburgh Sleep Quality Index achieved a validity score of 0.69-0.72, with a Cronbach's alpha coefficient of 0.72 (Setyowati & Chung, 2020). The UNCLA Loneliness Scale version 3 exhibited reliability with an alpha coefficient of 0.92 and validity, as indicated by Chi-square = 98.83,  $p$ -value = 0.08674, and RMSEA = 0.036 (Nurdiani, 2013). The Indonesian version of the JCS ensured reliability with a Cronbach alpha of 0.91, and content validity was confirmed by expert consensus on all items (Ibrahim et al., 2021). The item test correlation of the Indonesian version of the APGAR Family Scale ranged from 0.77 to 0.90, with a Cronbach alpha of 0.89 (Ridwan et al., 2022). Meanwhile, the Indonesian version of DSES demonstrated valid scores ranging from 0.404 to 0.726, with a Cronbach alpha of 0.929 (Karomah, 2015). The GSES showed Pearson correlation values for the 10 items ranging from 0.528 to 0.707, with a Cronbach's alpha of 0.847 (Lidya, 2020), and the WHOQOL-BREF displayed  $r$  table values  $>0.361$  and a Cronbach's Alpha of 0.880 (Anisah & Djuwita, 2019).

### 2.5. Data analysis

Data were analyzed using the IBM Statistical Package for Social Sciences software program, version 22.0. Statistic descriptive was used to determine the sociodemographics of the subjects with median (for numeric data) and percentage (for categorical data). Firstly, we tested the normality of data distribution. The variables—systolic blood pressure, diastolic blood pressure, pulse, temperature, and BMI—displayed normal distributions. Then, Chi-square tests and paired  $t$ -tests were conducted to compare categorical and continuous variables related to physical aspects, psychosocial aspects, self-efficacy, family social function, and the family's quality of life, respectively. A  $p$ -value  $<0.05$  was considered statistically significant.

### 2.6. Ethical considerations

This study was approved by the Ethics Committee of the Faculty of Dentistry, Universitas Jember (No. 918/UN25.8/KEPK/DL/2020). The subjects in this study were heads of families who volunteered to participate. They provided written informed consent for their participation. They were also informed that they had the freedom to withdraw from the study at any time.

## 3. Results

### 3.1 Characteristics of the participants

The sociodemographic characteristics of the subjects (Table 2) reveal that the median age of the families was 50 years, with 85.2% being males. The predominant religion among subjects was Islam (97%), with 73.6% being of Javanese ethnicity and 39.6% having completed senior high school education. Also, the majority were married (86.1%) and entrepreneurs (30.2%).

**Table 2.** Characteristics of participants (n=768)

Variables	Median	Frequency (f)	Percentage (%)
Age (year)	50		
Gender			
Male		654	85.2
Female		114	14.8
Religion			
Islam		745	97.00
Christian		16	2.1
Catholic		5	0.7
Hindu		2	0.3
Ethnicity			
Javanese		565	73.6
Madurese people		170	22.1
Osing community		1	0.1
Mixed		32	4.2

**Table 2.** Continued

Variables	Median	Frequency (f)	Percentage (%)
Educational background			
Elementary school		188	24.5
Junior high school		106	13.8
Senior high school		304	39.6
Bachelor degree		157	20.4
Master degree		13	1.7
Marital status			
Single		24	3.1
Married		661	86.1
Widow		25	3.3
Widower		58	7.6
Occupation			
Farmer		154	20.1
Public government		100	13.0
Entrepreneur		232	30.2
Private company		78	10.2
Seller		42	5.5
Others		162	21.1
Monthly income (IDR) (Min-Max=100,000 – 15,000,000)	1,800,000		

### 3.2 Differences in physical health status before and after home health care implementation

Table 3 shows differences in blood pressure, pulse rate, and temperature before and after the implementation of home health care ( $p < 0.05$ ). Both systolic (123.3(14.48) vs. 121.9(13.59)) and diastolic (81.1(10.05) vs. 80.1(9.5)) blood pressures, pulse rate (82.5(9.2) vs. 81.8(9.2)), and temperature (36.5(1.6) vs. 36.4(1.6)) were observed to decrease during home health care. Surprisingly, there was an increase in BMI after one month of physical distancing (23.29(5.59) vs. 23.78(7.53);  $p = 0.001$ ).

**Table 3.** The differences in physical health status before and after home health care (n=768)

Variables	Mean(SD)	Min-Max	$\rho$ -value
Systolic blood pressure			
Before	123.3(14.48)	70-180	0.014*
After	121.9(13.59)	70-170	
Diastolic blood pressure			
Before	81.1(10.05)	50-130	0.012*
After	80.1(9.5)	50-120	
Pulse			
Before	82.5(9.2)	58-113	0.001*
After	81.8(9.2)	60-112	
Temperature			
Before	36.5(1.6)	30-37	<0.001*
After	36.4(1.6)	30-37	
BMI			
Before	23.29(5.59)	11.46-38.05	0.001*
After	23.78(7.53)	15.56-36.85	

Notes. Significance is determined using a paired t-test. \*Significant value

### 3.3 Differences in physical and psychosocial aspects, family social function, self-efficacy, spirituality, and quality of life before and after home health care

Table 4 figures out a significant difference in the risk factors for exposure and personal risk factors of COVID-19, sleep needs, and physical activity before and after home health care ( $p < 0.05$ ). The proportion of risk factors for exposure and personal risk factors related to COVID-

19 decreased during home health care. Meanwhile, the participants' sleep needs and physical activity improved during physical distancing. Furthermore, self-efficacy, family social function, and the quality of life of the families improved during one month of home health care ( $p < 0.05$ ). However, no differences in loneliness and spiritual activity were observed before and after home health care ( $p > 0.05$ ).

**Table 4.** Differences in physical and psychosocial aspects, family social function, self-efficacy, and quality of life before and after home health care (n=768)

Variable	Before	After	p-value
	f (%)	f (%)	
Risk factors for exposure to COVID-19			
Low	593 (77.2)	625 (81.4)	0.016*
Moderate	173 (22.5)	142 (18.5)	
High	2 (0.3)	1 (0.1)	
Personal risk factors for COVID-19			
Low	435 (56.6)	532 (69.3)	<0.001*
Moderate	303 (39.5)	221 (28.8)	
High	30 (3.9)	15 (2.0)	
Sleep need			
Good	576 (75.0)	731 (95.2)	<0.001*
Poor	192 (25.0)	37 (4.8)	
Loneliness			
No	20 (2.6)	22 (2.9)	0.596
Mild	286 (37.2)	296 (38.5)	
Moderate	444 (57.8)	428 (55.7)	
Severe	18 (2.3)	22 (2.9)	
Physical activity			
Low	86 (11.2)	58 (7.6)	0.002*
Moderate	591 (77.0)	601 (78.3)	
High	91 (11.8)	109 (14.2)	
Family social function			
Mild	538 (70.1)	556 (72.4)	0.039*
Moderate	214 (27.9)	208 (27.1)	
Severe	16 (2.1)	4 (0.5)	
Coping strategy			
Moderate	5 (0.7)	5 (0.7)	1.000
High	763 (99.3)	763 (99.3)	
Self-efficacy			
Low	163 (21.2)	133 (17.3)	<0.001*
Moderate	547 (71.2)	543 (70.7)	
High	58 (7.6)	92 (12.0)	
Spiritual activity			
Low	355 (46.2)	371 (48.3)	0.087
Moderate	371 (48.3)	366 (47.7)	
High	42 (5.4)	31 (4.0)	
Quality of life			
Poor	623 (81.1)	597 (77.7)	0.011*
Moderate	1 (0.1)	0 (0)	
Good	144 (18.8)	171 (22.3)	

Notes. Significance is determined using the Chi-square test. \*Significant value

#### **4. Discussion**

This study assessed the impact of home health care programs on physical and psychosocial aspects, self-efficacy, family social function, and overall quality of life of families in East Java Province, Indonesia. The results revealed improvements in the physical aspects of families during the physical distancing period through home health care. Risk factors for exposure to and personal risk factors of COVID-19 decreased, while sleep needs and physical activity notably increased with the implementation of home health care. Furthermore, self-efficacy, family social function, and quality of life demonstrated improvement over the one month of home health care. This program helped families adapt to a new lifestyle in fulfilling their ADLs. However, the BMI also increased during this time.

The findings of this study identified a decrease in the proportion of individuals exposed to COVID-19 risk factors through home health care. This might occur because individuals were starting to develop awareness regarding the necessity of physical restrictions during the COVID-19 pandemic. Health education sessions conducted by professionals during this period helped families understand how to improve ADLs. This education, delivered during home health care, enhanced individual knowledge (Ashton & Oermann, 2014) about recognizing COVID-19 and its transmission. Thus, individuals began to develop new behaviors, such as reducing physical contact outside the home (Directorate General of Disease Prevention and Control, 2020) and maintaining personal hygiene by regularly washing hands and using masks during activities outside the home (Razi et al., 2020). Therefore, home-based socialization concerning COVID-19 is essential for minimizing families' exposure to risk factors and personal risks.

The study also revealed that the need for family physical activity increased during home health care. Health education provided during home health care sessions made families aware of the importance of ADLs. It is possible that the families began to realize the need for fitness and health during the COVID-19 pandemic (Jakobsson et al., 2020). This aligns with increased family sleep duration (Gulia & Kumar, 2020). Families acknowledged that exercise (Jakobsson et al., 2020) and sleep-rest balance (Gulia & Kumar, 2020) could improve immunity and overall health, thereby preventing the transmission of COVID-19. For this reason, families have begun regulating the need for rest and sleep at night and implementing a healthy community movement by doing a minimum of 15-30 minutes of moving exercises per day (Ministry of Health, Republic of Indonesia, 2017). However, there was a notable increase in family BMI. This could be attributed to the increased time families spend at home due to remote work and increased sleep needs. Therefore, the home health care program should anticipate potential future incidences of obesity during the physical distancing period.

This study also observed a positive correlation between home health care and enhancement of self-efficacy in participants. The personalized nature of care plans, coupled with education on self-management, empowered individuals to take an active role in their health. They exhibited increased confidence in managing their health conditions, adhering to prescribed treatments, and making informed decisions about their wellbeing. This aligns with previous research indicating that self-efficacy plays a crucial role in fostering positive attitudes and enhancing job performance among care workers (Cheng et al., 2023). Thus, by offering support, training, and resources to the families, home health care can contribute to the cultivation of their self-efficacy, subsequently leading to improved patient care and outcomes (De Maria et al., 2021).

Our findings identified that family coping strategies remained high before and after the home health care mentoring. This mentoring sustained the families in understanding and carrying out ADLs to improve their health. This also allows families to develop new values for healthy living during the COVID-19 pandemic (Wu et al., 2020). This is indicated by the significant increase in family self-efficacy during the personal distancing. Families learn with facilitation from internship students through learning healthy lifestyles so that they become psychologically comfortable with the stressors they are currently facing (Cao et al., 2020). For this reason, families with intensive assistance can develop good life values related to the stressors they face.

The families in this study were able to improve their social function significantly during home health care assistance. This improvement is probably because, during the physical distancing period, families have much time to interact with other family members at home (Hillis et al., 2010). Moreover, the families were able to fulfill their spiritual activities effectively with home health care support. By engaging in collective worship activities with other family members, the families can increase the functionalization of family values. This positive impact facilitated



families' time together, carrying out activities collectively during the physical distancing period (Dalmida et al., 2011; Sauer-Zavala et al., 2014). Furthermore, the quality of family life increased significantly during the physical distancing period with home health care support. The dimensions of the family life quality improved during the home health care program, aiming to establish new family life arrangements during the COVID-19 pandemic. Facing the COVID-19 pandemic, the implementation of home health care by nurses has become increasingly vital as an alternative to providing home health care for patients requiring ongoing monitoring or treatment. While loneliness, spiritual activity, and coping strategies are significant for individual wellbeing, they might not directly influence nurses' implementation of home health care. This is primarily because implementing home health care hinges more on medical expertise, clinical protocols, and infection prevention measures. Although loneliness might affect a patient's desire to receive home health care, spiritual activity, and coping strategies pertain to how individuals handle stress or seek meaning in challenging situations (Nurdiani, 2019; Rafiyah et al., 2011). Hence, while these three factors might influence a patient's quality of life and their response to care, they likely do not impact how nurses execute their clinical duties in the context of home health care during the COVID-19 pandemic.

## **5. Implications and limitations**

The study's outcomes highlight the beneficial effects of home health care on various aspects of familial wellbeing during the COVID-19 pandemic in East Java, Indonesia. Enhancements were observed in the physical and psychosocial aspects, self-efficacy, family social function, and quality of life (QOL) of the families after the intervention. The research suggests that the intervention, facilitated by trained internship students, played a pivotal role in fostering adaptive coping mechanisms, promoting healthy lifestyles, and instilling family values during physical distancing. Nevertheless, the noticeable rise in family BMI signals a potential concern, emphasizing the necessity for the home health care program to address and monitor potential obesity issues arising from prolonged periods of remote work and increased sleep requirements. Moreover, the positive association between home health care and heightened self-efficacy suggests that personalized care plans and self-management education contribute significantly to empowering individuals in effectively managing their health. The implications of the study underscore the importance of sustaining and adjusting home healthcare interventions to support families in navigating the challenges posed by the COVID-19 pandemic, with a focus on addressing emerging health concerns and sustaining positive lifestyle changes. This study, however, has certain limitations. This research, serving as a pilot study for managing COVID-19 infectious diseases through home visits, requires further development to expand interventions into larger-scale RCTs applicable to similar infectious diseases in the community.

## **6. Conclusion**

This study showed that implementing home health care during physical distancing affected the decrease in physical aspects such as blood pressure, pulse, temperature, risk factors for COVID-19 exposure, personal risk factors, sleep needs, and physical activity. Moreover, self-efficacy, family social function, and the family's quality of life improved during one month of home health care. This program facilitated the adoption of ADLs by families. Therefore, guidance and coaching provided through home health care should be developed to assist families in adapting to the new normal era of COVID-19. Future research should focus on enhancing home health care in families by comparing the physical distancing period with the new normal era of COVID-19.

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### Author contribution

All authors (TS, RAY, EAS, FD) contributed substantially to the study design, data collection, data analysis, and manuscript preparation. All of the authors have agreed and approved the final manuscript.

### Conflict of interest

There is no conflict of interest in this study.

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