

The Utilization of Animated Video Technology on Family Resilience in Facing The COVID-19 Pandemic

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ABSTRACT

Background: Family resilience is the dynamic condition of a family that has the physical, mental, and material strength to lead an independent life. **Aim:** This study was to identify the utilization of animated videos on family resilience in the COVID-19 pandemic in East Jakarta. **Methods:** This is a quantitative study with a quasi-experimental design and a randomized pre-/post-test control group design involving 289 respondents, of whom 197 were in the intervention group and 92 were in the control group. **Results:** The results showed that there was a significant difference between family resilience before and after intervention through the utilization of animated videos. **Conclusion:** Animated video is effectively used as a medium for learning and providing education with audio and visuals that can stimulate the human senses. Family resilience is the basis for improving family quality and maintaining the character and health of the whole family. **Recommendation:** This research recommends the use of animated videos to improve people's cognitive and affective domains and facilitate a good understanding of maintaining family resilience during the COVID-19 pandemic.

Keywords: *Animated Video; COVID-19; Family Resilience*

INTRODUCTION

The use of digital tools was widespread in COVID-19 pandemic response around the world. The corporate and public sectors have both exploited early adoption of digital technologies for health and education throughout the pandemic response. Technology has been used for easy access to healthcare services and for prompt access to health information. Therefore, digital technology has immense potential to improve public health measures during pandemics, including providing mental health support (Ummer *et al.*, 2021). The increased use of Information and Communications Technology (ICT) in family services during COVID-19, highlights benefit across service components. Various ICT has been implemented to deal with family resilience and manage various problems through individual sessions, groups and programmes on life education, family relationship and holistic health enhancement, counselling, and referral service (Ho *et al.*, 2022).

The data collected from the Ministry of Health of the Republic of Indonesia in July 2021 recorded 3,409,658 positive cases of COVID-19, of which 2,770,092 patients recovered and 94,119 patients died (Kementerian Kesehatan Republik Indonesia, 2021). The increase in the number of COVID-19 cases has forced the Indonesian government to implement a community activity restriction program that aims to limit community members' mobility and improve the community's compliance in implementing health protocols (Kementerian Dalam Negeri Republik Indonesia, 2022).

Family resilience is a dynamic condition that indicates the family's physical, mental, and material strength, enabling it to lead an independent life. There are eight family functions that can be the basis of family life to create a prosperous family (Ashidiqie, 2020). In theory, family resilience is believed to be a factor that can control the physical, mental, and material conditions of a family. However, the COVID-19 pandemic is a robust situation that causes major overall changes in all life systems, so family resilience alone cannot achieve life stability during a pandemic. The COVID-19 pandemic requires families to engage in all functions so that family members can prevent and control the spread of the COVID-19 virus. The Indonesian Ministry of Health also believes that due to family members' discipline in implementing health protocols, a family's role is important in eradicating the COVID-19 pandemic (Keputusan Menteri Kesehatan Republik Indonesia, 2020).

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The policy implemented to prevent the massive human-to-human spread of the COVID-19 virus is social distancing, which includes work from home (WFH) with the aim of making people work, study, and worship from home. This policy is based on the family's role in paying attention to, reminding, and familiarizing family members with adopting a healthy lifestyle (Ashidiqie, 2020). The relationship that exists between families and health problems makes it necessary for families to implement family resilience to maintain the health of all family members during a pandemic (Keputusan Menteri Kesehatan Republik Indonesia, 2020). Knowledge about COVID-19 is important for all family members as the basis for forming family attitudes and behaviors. This should summarize the purpose and rationale for the study.

METHODOLOGY

This study used a quasi-experimental, pre- and post-test control group design (Polit & Beck, 2013). The respondents in this study were residents of the RW 017 Tzu Chi flats in Cengkareng, West Jakarta. The inclusion criteria in this study were respondents aged 18 years or older who registered as residents of RW 017 Tzu Chi flats. Those who were deaf and had mental disorders were excluded from this study. The number of participants involved in this study was 289. While the intervention group consisted of 197 respondents, 92 respondents formed the control group. The division of respondents per group refers to literacy from Polit and Beck in the intervention group at 70% and 30% for the control group (Polit & Beck, 2013). The intervention and control group participants were selected from Towers A and B.

The measuring instrument used in this study was a paper-based questionnaire. The questionnaire consisted of questions about demographic data, knowledge about COVID-19, and family resilience function behaviors. The questionnaire, which was based on the concept of family resilience, consisted of eight functions: religion, social and cultural, affection, protection, reproduction, socialization and education, economy, and environmental protection. This questionnaire was made from a book on family resilience theory issued by the Indonesian National Family Planning Coordinating board in 2022. Family resilience is assessed using a Likert scale (1 – 5), so it can be identified whether a person has a good or less resilience. The intervention given to the respondents was the use of animated videos. This study uses motion graphic animation videos because this type is very popular among the public as explanatory videos. This type can also illustrate a concept with a clear style. Animation in this type is made to be something that attracts the audience, while text is used to convey important message to the audience. The animated video comprised two videos: Video 1 was on COVID-19 (Video 1), and Video 2 was on family resilience during the COVID-19 pandemic. This animated video has also been distributed widely on YouTube for widest possible use in Indonesia with the following link: <https://www.youtube.com/watch?v=sqKW6BpgsJI> and <https://www.youtube.com/watch?v=EEdIeJuhPQM>.

Educational intervention using animated videos as media was made for three weeks, with the initial series of both groups being given a pre-test questionnaire at the beginning of the meeting (the first week). The control group was not given any treatment. Animated videos were shown on a screen to be watched together with videos of four- and six-minute duration. In the first week, the intervention group watched Video 1 twice, at an interval of three days. In the second week, Video 2 was shown to the intervention group two times on different days, at an interval of three days. In the third week, both groups were reassembled for the post-test questionnaire.

Based on the fulfillment of research ethical principles, in the third week after collecting data, the control group was given the opportunity to watch both animated videos. The data was collected for the period from February to March 2022. Data analysis was conducted, including univariate and bivariate analyses. A univariate analysis was conducted to identify the description of demographic data related to age, gender, education level, employment status, knowledge about COVID-19, and family resilience. Bivariate analysis was carried out to analyze the differences in family resilience before and after the intervention using animated videos in the treatment and control groups. In this study, we used bivariate analysis according to the title and purpose to identify the relationship between X and Y variables.

Ethical Consideration

This study has passed ethics from the Ethics Commission of Health Research and Development at the Sint Carolus School of Health and Sciences with reference number 014/KEPPKSTIKSC/I/2022 which was issued on January 20th, 2022.

RESULTS

Demographic Data of Participants

This study involved 289 residents of Tzu Chi flats who were aged 18 years and older (Table 1). The majority (40.1%) were in late adulthood (36–45 years), 97.9% were Muslims, 57.4% had a basic education background, and 82.7% did not work. The distribution of the frequency of respondents' knowledge about COVID-19 in the pre-test showed that 63.3% had less knowledge, whereas in the post-test, 65.1% had good knowledge.

Table 1: Characteristics of Participants

Characteristics	N (%)
Age (years)	
Late Teens (17–25)	37 (12.8)
Early Adults (26–35)	57 (19.7)
Late Adults (36–45)	116 (40.1)
Early Elderly (46–55)	65 (22.5)
Late Elderly (56–65)	14 (4.8)
Religions	
Islam	283 (97.9)
Christian Protestants	3 (1.0)
Catholic	2 (0.7)
Buddha	1 (0.3)
Education Level	
Elementary	166 (57.4)
Intermediate	117 (40.5)
College	6 (2.1)
Employment Status	
Not Working	239 (82.7)
Working	50 (17.3)
Knowledge about COVID-19 Post-test	
Good	188 (65.1)
Less	101 (34.9)

Family resilience during the COVID-19 pandemic was in less than 63% of respondents during the pre-intervention period. The use of animated videos showed that, during the post-intervention period, 57.4% of respondents had good family resilience (Table 2).

Table 2: Distribution of Family Resilience

Family Resilience	N (%)
Post - test	
Good	166 (57.4)
Less	123 (42.6)

Family resilience is based on the concepts of eight family functions. In the post-intervention period, 52.6% showed less religious function, 52.6% showed less social and cultural function, 51.6% showed less affection function, 58.1% showed good protection function, 53.3% showed good reproduction function, 53.3% showed good socialization and education function, 60.6% showed good economic function, and 55.7% showed less environmental protection function (Table 3).

Table 3: Distribution of Family Resilience Sub-Variable (Post-Test)

Eight Functions of Family Resilience	N (%)
Religious	
Good	137 (47.4)
Less	152 (52.6)
Social and Cultural	
Good	137 (47.4)
Less	152 (52.6)
Affection	
Good	140 (48.4)
Less	149 (51.6)
Protection	
Good	168 (58.1)
Less	121 (41.9)
Reproduction	
Good	154 (53.3)
Less	135 (46.7)
Socialization and Education	
Good	163 (56.4)
Less	126 (43.6)
Economy	
Good	175 (60.6)
Less	114 (39.4)
Environmental Protection	
Good	128 (44.3)
Less	161 (55.7)

The bivariate analysis was conducted to identify differences in dependent variables before and after the intervention. This analysis was based on data with scale ratios using a two-related sample T-test and comparing changes in variables between intervention groups. The differences in changes in family resilience pre- and post-utilization of animated videos were tested using a paired *T*-test because they have the same subject. Previously, the data were tested for normality, and the obtained data were normally distributed (Table 4).

Table 4: Analysis of Differences in Family Resilience

Variable	Mean	SD	SE	N	<i>p</i> -value
Family Resilience					
<i>Pre</i>	53.31	4.65	0.27	289	0.000*
<i>Post</i>	51.81	3.00	0.17	289	

The family resilience before and after the utilization of animated videos was $p = 0.008$ ($p < 0.05$). It can be concluded statistically that there was a significant difference between family resilience before and after the intervention. Data analysis also showed that there were differences in knowledge of COVID-19 before and after the intervention of using animated videos (p value = 0.000 0.05) (Table 5).

Table 5: Analysis of Differences in Knowledge About COVID-19

Variable	Mean	SD	SE	N	<i>p</i> -value
Knowledge					
<i>Pre</i>	7.10	1.56	0.09	289	0.000*
<i>Post</i>	7.84	1.28	0.007	289	

DISCUSSION

The location of this research was Buddha Tzu Chi Flats, Cengkareng, West Jakarta (Damayanti, Moersidik, & Sarwono, 2014). The family is the first and foremost environment for fostering children's growth and development as the future of a country. Family resilience is a condition that shows family members' tenacity, toughness, and physical and mental abilities that allow them to live independently and in harmony, thus improving their welfare and inner and outer happiness (Harniati & Hamang, 2020).

The individual characteristics of the respondents in this study included age, religion, educational level, employment status, and knowledge. A person's socio-demographic factors contribute to determining their perceptions; hence, the formation of a positive or negative mindset is closely related to a person's characteristics (Nyamwata *et al.*, 2017). The characteristics of a community are largely determined by the collective mindset that forms the basis for the community's attitudes and behaviors. Age is an individual socio-demographic factor that is widely studied because it is related to maturity, ability, and perspective (Hernández-Cruz *et al.*, 2017). This study reveals that most of the respondents (40%) were in late adulthood (36–45 years). A study of individual factors reveals that late adulthood is a period of maturity and an indication of wide and varied life experience.

Religion is a factor that greatly determines the values and virtues of character in society. Religious practice directs the human perspective in family and social life (Robbins & Judge, 2017). Religion becomes one of the functions of family resilience because it is a basic need of every human being, and the family is the first place to instill religious values and norms. This belief is important during the pandemic, and it provides peace to every family member, leading to family resilience. Religion is an important factor related to social relations between family members. Islam was the religion of most respondents (97.9%) in this study. A study of family resilience argues that the vulnerable quality of resilience is caused by several factors, including a lack of individual commitment to their religion, the influence of globalization and changes in lifestyle, and communication failures between family members.

The function of religion, in addition to being centered on the religious understanding of everyone, also requires the parents' role in strengthening religious values by maintaining faith, morals, physical, mental, and intellectual health, and sexual and social virtues (Thariq, 2017). In religion, the core message to everyone is to protect themselves and their families from sins and mistakes so that this can lead a person to become good and provide peace in family relationships. Another individual characteristic is educational level, which can influence a person's critical thinking (Khanade & Sasangohar, 2017). The study findings showed that 57.4% of

respondents had elementary education and 40.5% had intermediate education. Attitudes and behaviors are not only related to life experiences but are also influenced by educational background. Education level influences the foundation of mindset, cognitive behavior, and character. The members of the Tzu Chi flats had educational levels up to the intermediate level.

Employment status is an inherent individual factor because it is related to the quantity of work experience gained during the work period in the company (Kambuaya, Rompas, & Hamel, 2016). Work experience is a factor that can affect a person's character, which is formed during the period of employment, and the level of skills acquired during work. In this study, most of the respondents (82.7%) were housewives. Employment status is closely related to family resilience because it can affect family conditions at both the physical and material levels, allowing families to live independently and develop their families to achieve prosperity. The National Family Planning Coordinating Board (BKKBN) emphasizes that the above-mentioned eight family functions are the foundation that must be understood before starting a family (BKKBN, 2019). These eight functions create a good family-planning mindset. Economic function is one of the factors that play an important role in maintaining family resilience. For a decent life, the family's needs for shelter, food, clothing, and other needs must be adequately met.

Knowledge is facts or information obtained through experience or learning. Knowledge can also be obtained from the results of humans perceiving through their senses (eyes, noses, ears, etc.). The results of this study showed that most of the respondents (63.3%) had less knowledge before the intervention. After using the animated video as a medium for intervention, most of the respondents (65.1%) had good knowledge. One of the animated videos was "Serba Serbi COVID-19," which described the basic understanding, causes, symptoms, ways of spreading, prevention measures, treatment, and complications of COVID-19 disease. Strengthening family resilience during the COVID-19 pandemic has become a thematic issue in Indonesian national development because it is rooted in the family element as a micro community in society (Dom, 2020). Strengthening family resilience is necessary because of the many social problems that occurred during the pandemic, such as domestic violence, drug use, crime, and others, and because of the collapse of the foundation of family resilience. The animated video "Serba Serbi COVID-19," used as an intervention tool, includes information about the source of preventing the spread of COVID-19.

Family resilience reflects the families' adequacy and ability to achieve access to income and resources to be able to meet their basic needs, such as food, clean water, health services, education, housing, participation in the community, and social integration. The family resilience program has the goal of ensuring that every family member implements the functions or dimensions that must be applied to family life. This function is known as the family function, which is a reference or pattern of family life in the context of realizing a prosperous and quality family. The eight functions of the family include religious, social, and cultural; affection; protection; reproduction; socialization and education; economy; and environmental protection. An appropriate implementation of these eight family functions can impact the growth of family members to become quality human resources and possess superior intelligence and character (Musfiroh *et al.*, 2019).

Good family resilience is supported by the optimal application of eight functions. The relationship between these functions will form a family that loves and cares for each other's physical and spiritual well-being. In the pandemic era, inequality in meeting needs based on eight functions has become the basis of various life problems. The fulfillment of primary financial needs will increase the pressure on life if it is not accompanied by strong acceptance from each family member. The role of religious, social, and affectionate functions becomes a fundamental basis for the family to be able to accept the various conditions experienced with a positive view (Aziwanti & Fachrina, 2019). The description of eight family functions in pre-intervention showed that the majority belong to the family with less resilience (63%). In the sub-functions of family resilience, there is less resistance (54%) to the religion function, 57.4% to the social and cultural function, 61.2% to the affection function, 53.3% to the protection function, and 52.2% to the environment protection function. Good family resilience was found in reproductive function (54.7%), socialization and education function (54.3%), and economic function (52.2%).

The identification of family resilience post-intervention showed that the majority (57.4%) have good resilience. Description of sub-functions represented good resilience (58.1%) in protection function, reproductive function (53.3%), socialization and education function (56.4%), and economic function (60.6%). Less cumulative family functions are also founded in the religious function (52.6%), social and cultural function (52.6%), affection function (51.6%), and environment protection function (55.7%). Religious function identifies individuals' or family members'

religious activities in society. Religious function emphasizes parental participation as a religious expert to lead, provide information, and build faith among their children (Lado *et al.*, 2022). The second function is social and cultural. This function is accentuated by the pattern of behavior related to other people (socialization) and how families explain cultural heritage so that family members can interact well in society.

Affection function in this research has less resilience in pre- and post-tests. The children's growth cannot be separated from how the parents care for and give love to them. The family's role is highly important in shaping the child's personality, so this function emphasizes the role of each family member to give love, care, and protection to one another. The protection function is an important dimension in the growth and development of children who need a sense of security and comfort (Lado *et al.*, 2022). In this study, the protection function is identified with the question about the behavior of protecting each family member from illness, whether physical or mental, especially during the COVID-19 pandemic. These two functions, affection and protection, have a mutually supportive relationship. In a sense, raising a child not only requires support concerning physical growth but also shaping attitudes as a part of behavior in society.

The reproduction function emphasizes the family's need to develop human biological functions to have a child (Prayitno, Sofwan, & Ibrohim, 2021). The family also provides information about age-appropriate sex education. In the COVID-19 pandemic, the spouse should plan pregnancy well. Preventing complications that might occur due to COVID-19 during pregnancy will provide a positive experience for women. Socialization and education function in both the pre- and post-tests, which show good resilience. This function emphasizes family efforts to educate children to grow and participate well in society. This study also identifies the patterns that schools implemented during the COVID-19 pandemic and that are still doing well using online methods that involve parental monitoring. Economic functions describe families' ability to cater to the needs of family members for a living.

Economic function as a pattern of the framework of the family, where the head of the family is the main breadwinner and other family members will be the supporters (Prayitno, Sofwan, & Ibrohim, 2021). In the pre- and post-tests, economic function showed good resilience based on data on layoffs experienced during the pandemic, the existence of social assistance from the governments, and economic adequacy during the pandemic. The environment protection function emphasizes shaping behavior conducted by a family member toward conformity to the environment and society (Prayitno, Sofwan, & Ibrohim, 2021). The measuring instrument in this study identified the activity of family members in the community (Lado *et al.*, 2022). Families that tend to be inactive, such as members of the COVID-19 task force, show fewer cooperation activities during the COVID-19 pandemic. This situation occurs due to the high rate of transmission and illness during COVID-19, which makes people afraid to do activities outside their homes.

The results of the relationship analysis showed that there was a significant difference between family resilience before and after the animated video intervention. This result is in line with the study of the effect of animated video as a medium on the knowledge and attitudes of 30 students at Government Junior High School Pematang Siantar, which gave evidence of animated video's influence. A study of 32 students at the Health Polytechnic Ministry of Health Jakarta II also confirmed the impact of using animated videos as educational media in increasing students' knowledge. This study showed that animated video, as a media tool, is more meaningful than a leaflet (Prawesthi *et al.*, 2021). This study identified areas of knowledge about COVID-19 and family resilience attitudes. One of the factors that influences the realm of knowledge and attitude in education is the use of media to convey information. Media that can transmit information effectively are those that can stimulate the human senses in the process of delivering material. Animated video as a media tool has several advantages, such as graphic motion visuals, interactive audio, varied colors, and an attractive appearance. These features can stimulate the human senses to capture information to construct human knowledge and attitudes (Ramadhanti, Sulistyowati, & Jaelani, 2022). These features can stimulate the human senses to capture information to construct human knowledge and attitudes. Moreover, future development of smart and intelligent concepts based on Artificial Intelligence can be used very effectively to advance treatment in mental health along with sustainable mental healthcare provision (Poddar, 2022).

CONCLUSION

The results showed that there were differences in family resilience in the intervention group after watching animated videos. These videos are used as an intervention tool that contains educational information about COVID-19 and family resilience strategies during the COVID-19 pandemic. It was also found that there was a difference in family knowledge after the animated video intervention. Therefore, nurses and professional health workers can design and

utilize video animation as an educational medium for providing education to the community. Educational videos have become an important part of education, providing an important content delivery tool. Effective use of video as an educational tool is enhanced when instructors consider three elements: how to manage the cognitive load of the video, how to maximize student engagement with the video, and how to promote active learning from the video.

The real contribution of the results of this study is that animated videos can be used as a medium for COVID-19 education by health workers and families. Contributions for future research are provided as a reference for comparison to educational research with other methods. Nurses and professional health workers are expected to research and develop nursing education methods that can stimulate public understanding of healthy lifestyles during a pandemic. This research recommends the use of animated videos to improve people's cognitive and affective domains and facilitate a good understanding of maintaining family resilience during such pandemic.

Conflict of Interest

The authors declare that they have no conflict of interests.

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