Differences in Family Immunity in Preventing the Spread of Infection in Healthy Families and Confirmed COVID-19

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INFORMASI	ABSTRACT
Korespondensi: nurmukarromah@fik.um-surabaya.ac.id	*Background: Coronavirus Disease 2019 (COVID-19) causes social transformations that can shake the existence of individuals and families so that they become vulnerable or have the potential to not have Family Immunity.* *Objectives: The purpose of this study was to analyze differences in family immunity in preventing the spread of infection in healthy and confirmed families of COVID-19.* *Methods: A case control research design to compare two groups regarding family immunity to the prevention of COVID-19 infection, which was carried out in the city of Surabaya, Indonesia in August 2021 – March 2022. A total of 104 respondents were recruited using convenience sampling. Data were collected using a questionnaire and analyzed using SPSS version 21 with Chi Square test.* *Results: Family immunity shows better results in healthy families with 43.3% better family belief system status, 28.8% good organizational patterns, 38.5% better communication process and 36.5% better Controlling the spread of infectious disease. The results of the significance test showed that all P values 0.05 and calculated X2 results > X2, it can be concluded that all indicators are related to family COVID-19 status and can explain the family immunity variable.*
	Conclusion: Family immunity in the healthy family group and the confirmed COVID-19 group showed different results, families with healthy conditions had much better family immunity than families who had confirmed COVID-19.

INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is an international health emergency that has become a global pandemic [1]. The spread of COVID-19 is taking place very rapidly and showing a very high number of cases making this infection the main focus of world health [2]. Various programs have been established by the World Health Organization (WHO) such as developing guidelines for case finding and management, personal and environmental actions, travel actions, and mass gatherings [3, 4]. However, cases of COVID-19 continue to soar and cause a health crisis and high mortality rates [5].

Prevention of the spread of COVID-19 infection in Indonesia has been carried out by the government through a health protocol program, self-isolation, implementation of community activity restrictions, as well as continuous tracing and tracking [6, 7]. Various protocols have also been published, such as protocols in areas and public transportation, protocols for educational institutions, health protocols, public communication protocols, protocols for entering Indonesian territory (airports, ports, PLBDN) (Ministry of Health, RI, 2020), but the number of cases still high, especially in the 2nd wave of COVID-19. Until February 2022, the number of COVID-19 cases reached 5.96 million and the total death toll was 154,000 [8]caregiving burden, and confinement-related stress (e.g., crowding, changes to structure, and routine.

The pandemic condition that is still side by side with the community has had many impacts, both in terms of health, social, economy, education, politics and development [9]China, it is suggested that this is likely the zoonotic origin of COVID-19. Person-to-person transmission of COVID-19 infection led to the isolation of patients that were subsequently administered a variety of treatments. Extensive measures to reduce person-to-person transmission of COVID-19 have been implemented to control the current outbreak. Special attention and efforts to protect or reduce transmission should be applied in susceptible populations including children, health care providers, and elderly people. In this review, we highlights the symptoms, epidemiology, transmission, pathogenesis, phylogenetic analysis and future directions to control the spread of this fatal disease. The epidemiology and pathogenesis of coronavirus disease (COVID-19. The impact is felt by the community when they have to limit themselves from going out of the house, not gathering, not going to school and not being able to work for a living as usual [10, 11]. This is a dilemma faced by the community when the pandemic conditions continue to increase but daily needs and activities must be met. The government has launched the New Normal policy as an effort to restore people's living conditions after the large-scale social restrictions [12, 13]. The challenge faced in implementing the new normal is the relaxation of health protocols and this results in an increase in the number of cases. The dynamics of the community's response in dealing with the COVID-19 pandemic is strongly influenced by the level of awareness, discipline and social behavior of the community [14, 15].

The family, the smallest unit of society, can be the main defense in preventing COVID-19 infection, so family resilience is an important factor in breaking the chain of transmission [16, 17]. The negative impact of the COVID-19 pandemic causes social transformations that can shake the existence of individuals and families so that they become vulnerable or have the potential to not have Family Immunity [18]. Individuals in the family need to increase their immunity through family centered care efforts with the principle of empowerment, especially those related to strengthening the structure, function, and role of the family in preventing COVID-19. The purpose of this study was to analyze differences in family immunity in preventing the spread of infection in healthy and confirmed families of COVID-19.

METHODS

Research design

A case control research design to compare two groups regarding family immunity to the prevention of COVID-19 infection which was carried out in the city of Surabaya, Indonesia in August 2021 – March 2022. Researchers observed and measured the Family Immunity variable in preventing the spread of Covid-19 in healthy families and families affected by COVID-19.

Study Participants

Research respondents are people in the city of Surabaya who are divided into 2 groups, namely healthy family groups and families confirmed to have COVID-19. Selection of respondents based on the criteria of age 18-54 years; have been diagnosed with COVID-19; the family has never been confirmed for COVID-19;

settled in Surabaya; not having a mental disorder and can read and write. The research sample was 104 respondents who were selected using convenience sampling.

Data Collection

Family Immunity in both groups was assessed using indicators 1) family belief system; 2) organizational patterns; 3) communication processes; and 4) controlling the spread of infectious disease. Data collection is done by first carrying out the licensing process. Data was collected using a questionnaire through closed questions and before the instrument given to the respondents, it was test with validity and reliability first in the 30 patients with the same characteristics with the respondents of the study. The value of validity average 0.486 – 0.647 (r table = 0.321) and the validity value was above 0.885.

The questionnaire consists of indicators of family belief system with sub indicators of making meaning of adversity, positive outlook, transcendence and spirituality consisting of 10 questions. Organizational patterns with sub-indicators of Flexibility, Connectedness, Social and economic resources consist of 10 questions. Communication Processes which consist of sub indicators Clarity, Open emotional expression and Collaborative problem solving consisting of 9 questions and Controlling the Spread of Infectious Disease with sub indicators Build ethical principle, preventing transmission and Limiting contact with 11 questions. The instrument uses a Likert scale with 5 levels, namely strongly disagree (score 1), disagree (score 2), disagree (score 3), agree (score 4) and strongly agree (score 5). The family belief system indicator with sub-indicators of making meaning of adversity, positive outlook, transcendence and spirituality consists of 10 questions with the highest score of 50, the interpretation of the score being 26-50 and less than 1-25. Organizational patterns with sub-indicators of Flexibility, Connectedness, Social and economic resources consist of 10 questions with good categories (score 26-50) and less (1-25). Communication Processes which consist of sub indicators Clarity, Open emotional expression and Collaborative problem solving consisting of 9 questions with the highest score of 45, good category in the range of scores of 24-45 and less with a score of 1-23. Meanwhile, the indicator of controlling the spread of infectious disease with sub-indicators of Build ethical principle, preventing transmission and

Limiting contact with 11 questions, for the good category the score is 29-55 and the less category is 1-28.

Data Analysis

Data that collected were tabulated and given the coding for analysis in SPSS version 21. Data was analyzed using descriptive and inferential statistics were presented in descriptive statistical table and inferential statistics using Chi Square, all statistical correlation were presented with p value < 0.05.

RESULTS

Research conducted on 104 respondents from healthy families and families with confirmed COVID-19 status in the city of Surabaya showed that the majority were aged >40 years with 81 respondents (77.9%). The most dominant respondents were women (91.3%) and the education level of senior high school graduates was the most (51.9%) (Table 1).

Family immunity in families with healthy conditions and confirmed COVID-19 is explained by the variables of family belief system, organizational patterns, communication processes and Controlling the Spread of Infectious Disease. The family belief system in families who have confirmed COVID-19 shows lower results, namely 35.6% compared to healthy families in the good category of 43.3%. Healthy families show good organizational patterns by 28.8% compared to families with confirmed COVID-19 only 14.4%. The communication process in healthy families is also better than families who have confirmed COVID-19, by 38.5%. Likewise, Controlling the Spread of Infectious Disease shows better results in healthy families by 36.5%. The results of the significance test show that all P values 0.05 and X2 count table X2 values, it can be concluded that all indicators are related to family COVID-19 status and can explain the family immunity variable (Table 2).

DISCUSSION

Family immunity in the healthy family group and the confirmed COVID-19 group showed different results, families with healthy conditions had much better family immunity than families who had confirmed COVID-19. Based on the family belief system, organizational patterns, communication processes and controlling the spread of infectious disease, better results were obtained in healthy families and had never been confirmed by COVID-19.

The more families have a good belief system, the more they will take care of each other from being exposed to COVID-19 [11]. Because the family is the smallest social environment owned by each individual, it is necessary to have closer and more intimate relationships between family members. This is because of the blood ties that form the basis of the relationship; therefore, family is the best support system. Where everyone will get good and full support in all conditions. To create a good support system from the family environment, of course a trust is needed. Where each member trusts each other, putting aside prejudice so that positive energy will be created in the family environment.

The pattern of organization shows family togetherness in dealing with existing problems. Organizational pattern consisting of several sub-indicators including social and economic resources, connectivity, and flexibility. This is in line with research showing that disasters cause families to experience a significant decrease in per capita income and family assets [13]. The variables of belief system, organizational pattern, and communication process are positively related each month. The amount of family assets before the disaster was positively related to the output of 1-month family resilience. The results of the regression test showed that residence status (refugee and non-refugee) had a negative effect on the output of 1-month family resilience. The dimensions of the meaning of misfortune, positive views, linkages, and the output of family resilience 1 month have a positive effect on the output of family resilience 3 months after the disaster.

The communication process which consists of clarity of message content, openness of all things conveyed to family members, collaboration between family members and even to others makes the communication process a great influence on one's understanding of an object [19, 20]. The communication process is the process of conveying one's thoughts or feelings to others by using symbols/symbols as media that can directly translate the thoughts or feelings of the communicator to the communicant [21]to assist policy makers to develop actionable policies, and help clinical practitioners (e.g., social workers, psychiatrists, and psychologists. The communication process begins with the material being discussed by the communicator and accepted by the communicant. Seeing this definition, it is very important that the openness and clarity of the message conveyed can be interpreted by the recipient of the message properly as intended by the sender of the message. Collaboration

is needed to spread the message to the public so that it is widely understood, especially regarding this understanding of covid19 [22, 23].

CONCLUSION

Family immunity which is explained by family belief system, organizational patterns, communication processes and controlling the spread of infectious disease in healthy family groups and confirmed COVID-19 groups shows different results, families with healthy conditions have much better family immunity than families who have been confirmed to have COVID-19.

Authors' contributions

NM: Concept and design the research study, analysis and interpretation data, review of the manuscript and do critical correction before submission, supervision and evaluation the study detail. FLB: Contribute in writing manuscript, collect data from the respondents, drafting table of manuscript and final approval of the manuscript. AZ: Concept and design the research study, collect data from the respondents, and data analysis.

Availability of data and material

The data used and analyzed during the research until the writing of the manuscript is the author's data and is available in the author's database, every reader who needs can contact the corresponding author with reasonable reasons.

DECLARATION

Ethical Consideration

Ethical approval of this study was certified by Ethical committee of Muhammadiyah University of Surabaya with the number O69/KET/II.3/AU/F/2021. The respondents first gave sign in the informed consent, they sign with voluntary after they got some explanation about the study from the researcher.

Conflict of Interest: The researcher declares that there is no conflict of interest in this research, so that the research is guaranteed not to have problems between members and the author of the article.

Consent for publication

Not applicable

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