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ORIGINAL ARTICLE

CORRELATION OF FAMILY SUPPORT AND FAMILY RESILIENCE WITH DHF PREVENTION BEHAVIOR IN OLDER ADULTS

Hubungan Dukungan dan Ketahanan Keluarga dengan Perilaku Pencegahan DBD pada Lansia

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ABSTRACT

Background: The elderly are a vulnerable age group for Dengue Haemorrhagic Fever (DHF) with a high risk of death. Families must carry out their roles in efforts to prevent DHF in older adults. **Purpose:** This study aims to identify the correlation between family support and resilience with DHF prevention behavior. **Methods:** This study used a correlational design to detect a relationship between family support and resilience variables and DHF prevention behavior by older adults. The research location was at the Andalas Health Center in Padang, with 96 randomly recruited from seven elderly Integrated Public Health Centers. The instrument consisted of three closed-question questionnaires. Family support is identified through informational, reward, instrumental, and emotional indicators, while family resilience includes relationship communication, positive framing, and external resources. Data were analyzed using the Spearman Rho test. **Results:** Most respondents were older adults (73.96%) aged 60-65 (68.75%). The correlation test between family support and family resilience with DHF prevention behavior has a significant relationship (0.00). Testing the correlation partially on each indicator shows the highest level of correlation on the instrumental indicator (0.83). The correlation between family support and resilience was highest on emotional and communication-relationship indicators (0.71). **Conclusion:** Family support and resilience are correlated with DHF prevention behavior by the elderly. Emotional support from the family through communication appropriate to the older adults' age phase is needed to prevent DHF.

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ABSTRAK

Latar belakang: *Lansia merupakan kelompok usia rentan Demam Berdarah*

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Dengue (DBD) dengan risiko kematian yang cukup tinggi. Keluarga harus menjalankan perannya dalam upaya pencegahan DHF lansia. ***Tujuan:*** *Penelitian ini bertujuan untuk mengidentifikasi korelasi antara dukungan dan ketahanan keluarga dengan perilaku pencegahan DHF.* ***Metode:*** *penelitian ini menggunakan desain korelasional untuk mendeteksi kaitan antara variabel dukungan dan ketahanan keluarga dengan perilaku pencegahan DHF oleh lansia. Lokasi penelitian di Puskesmas Andalas kota Padang, dengan jumlah sampel 96 yang telah direkrut secara random dari tujuh Posyandu lansia. Instrumen berupa tiga kuesioner pertanyaan tertutup. Dukungan keluarga diidentifikasi melalui indikator informasional, penghargaan, instrumental, dan emosional, sementara ketahanan keluarga mencakup ikomunikasi-relasi, framing positif, dan sumberdaya eksternal. Data dianalisis menggunakan uji spearman rho.* ***Hasil:*** *mayoritas responden adalah lansia perempuan (73.96%) usia 60-65 tahun (68.75%). Uji korelasi antara dukungan keluarga dan ketahanan keluarga dengan perilaku pencegahan DHF mempunyai hubungan signifikan (0.000). Pengujian korelasi secara parsial pada masing-masing indikator menunjukkan tingkat korelasi tertinggi pada indikator instrumental, (0.832). Korelasi antar indikator pada variabel dukungan keluarga dan ketahanan keluarga tertinggi pada indikator emosional dan komunikasi-relasi (0.706).* ***Simpulan:*** *Dukungan dan ketahanan keluarga berkorelasi dengan perilaku pencegahan DHF oleh lansia.. Dukungan emosional dari keluarga melalui komunikasi yang sesuai dengan fase usia lansia sangat diperlukan dalam upaya pencegahan DHF.*

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INTRODUCTION

Dengue Fever (DD) and Dengue Hemorrhagic Fever (DHF) are diseases that are transmitted through the bite of the Aedes sp—Mosquito (1). Dengue virus can cause various conditions, ranging from asymptomatic to more severe, namely Dengue Shock Syndrome (DSS) (2). This disease is still a major global problem in tropical and subtropical regions, where Asia ranks first as the region with the highest number of DHF sufferers each year. Indonesia, as a country with a tropical climate, has enormous potential to experience endemic events of Dengue Hemorrhagic Fever. Currently, more than 100 countries in the world have found cases of DHF. In Southeast Asia, 70% of them were affected by morbidity and mortality (3).

The global incidence of dengue has grown dramatically in the last decades (4). The number of dengue cases reported by WHO has increased more than 8-fold in the previous two decades, from 505,430 cases in 2,000 to more than 2.4 million in 2010 and 5.2 million in 2019. Deaths reported between 2000 and 2015 increased from 960 to 4,032 (5). According to data in Indonesia, the Incidence Rate of DHF in 2019 was 51.53 per 100,000 population. This figure shows an increase compared to the previous two years, namely 26.1 in 2017 and 24.75 in 2018. Dengue cases in West Sumatra Province amounted to 41.59 per 100,000 population. The national death rate or Case Fatality Rate (CFR) slightly decreased from 0.71% in 2018 to 0.64% in 2019. The CFR in West Sumatra Province is 0.40% (6).

Although children are the most vulnerable group to dengue, epidemiological studies suggest that older people also have susceptibility to this disease (7). In 2015, a study in Taiwan found that of 2,358 dengue sufferers, the age group experiencing acute symptoms was 60-70. This age also has an increased risk of comorbid disease severity: Diabetes, hypertension, end-stage kidney disease, and a risk of death of 46.20% (8). A Dengue study at Dr. M. Djamil Central Hospital, Padang, with a sample of DHF patients from 2020–January 2022, obtained 97 samples of DHF patients, and the data taken was data when the patient had a fever on the fifth day. The results showed that of the 97 patients, most of the age was in the adult category (20–60 years), namely 53 people (54.60%), which means there were several patients in the elderly age range in the dengue incident finding (6). In the same year, 2022, the Andalas Public Health Center, Padang Timur District, Padang City, experienced an increase in

DHF cases of 92.59%, spread over the ages of children, adolescents, adults, and older people. There have been 11 DHF-related education sessions with 186 active and productive community members participating. With a significant increase in cases and the absence of elderly participants in DHF education activities, this age group is quite vulnerable to understanding DHF and its preventive behavior (9).

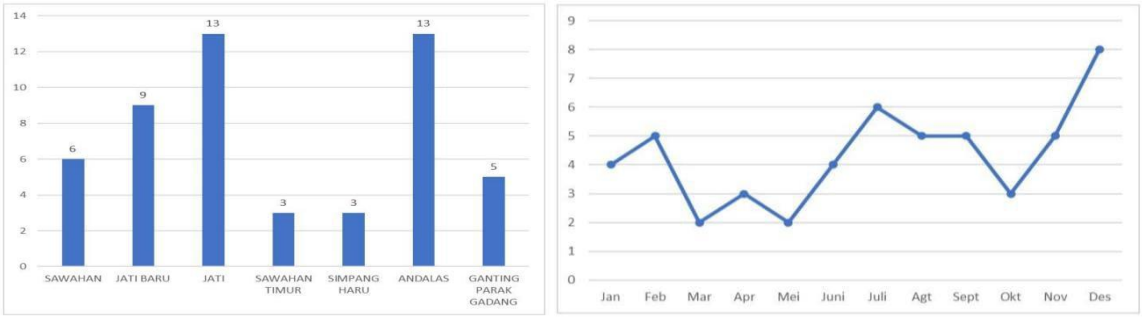

Figure 1. Distribution and Trend of Increase in DHF Cases in The Andalas Public Health Center

The physical condition of older adults mostly already has comorbid degenerative diseases, such as heart disease, high blood pressure, kidney failure, and other cardiovascular diseases, which often causes bias in diagnosing an infection (10). A study in Taiwan found that several elderly dengue sufferers experienced delays in treatment due to vague symptoms that were not specific to dengue characteristics. As a result, some of them experienced recovery delays, even leading to death (11). Meanwhile, a study in America found that the case fatality rate of hematuria and thrombocytopenia would be higher in elderly patients (12).

Several studies state that dengue can be prevented through a concerted movement involving all societal elements (13–15). A prevention movement in the Aragua State from May 2009 to November involved 500 families participating in a DHF prevention movement (16). This study describes the involvement of family members in general so that the contribution of older adults is not specifically visible. Mutual support is essential because this activity is a joint movement involving many people. Social support from the family for more aged people manifests the expression of pleasure, attention, appreciation, and help, which each family member feels (17). The impact of this support is creating a sense of acceptance, assistance, motivation, and attention, which improves the welfare and quality of life of older adults (18,19). Vector control through the movement to keep the environment clean by involving all family members has proven effective in preventing dengue endemic (20). Older adults who tend to have comorbidities, such as hypertension, heart disease, and diabetes, must be monitored by their families because they are more susceptible to the dengue virus (21). In the elderly, the dengue fatality rate is higher due to comorbidities, even without considering the severity of the fever (22). In 2008, a study found that older adults affected by DHF had a higher risk of experiencing hematuria and thrombocytopenia (23).

Until now, there is no available data and research on Dengue prevention for older adults, especially those related to social support and family resilience. This research is significant because the data obtained can be used as a reference for compiling a family empowerment program to suppress the incidence of DHF and reduce the risk of death from DHF in the elderly.

The aims of this research are: (a) to know the description of social support, family resilience, and DHF prevention behavior in older adults (b) to determine the magnitude of the relationship between social support and family resilience with DHF prevention for older adults both as a whole and in terms of accompanying indicators: (c) determine indicators of social support and family resilience that the most crucial role in the prevention of DHF behavior in older adults.

METHODS

This study uses a correlational design to detect how social support and family resilience factors and their respective indicators relate to DHF prevention behavior in older adults in Padang City. The research location was determined in the working area of the Andalas Public Health Center,

East Padang District, Padang City. The research sample consisted of 96 people who were taken by proportional random sampling from seven elderly Integrated Public Health Center in the Andalas Public Health Center with inclusion criteria: (a) elderly aged 60-70 years; (b) active in elderly Integrated Healthcare Center activities; (c) capable of two-way communication. Data was collected through a survey with a questionnaire instrument consisting of three parts according to the research variables.

The research instrument has three main categories: Social Demographics, Social Support, and Family Resilience, along with elderly DHF prevention behavior. Social Demographics includes two statements assessed using a Likert scale (1-5) to measure the respondents' gender and age. The Social Support category comprises 12 statements with a Likert scale (1-5), measuring social support in informational, reward, instrumental, and emotional support. Meanwhile, the Family Resilience category comprises 19 statements with a Likert scale (1-5), assessing communication and relationships, positive framing, and external resources supporting family resilience. Lastly, the prevention behavior of DHF in the elderly is measured with 11 statements using a Likert scale (1-5).

Data analysis was carried out descriptively and correlationally. Descriptive data is displayed through the demographic frequency distribution and each variable indicator to partially describe social support, family resilience, and DHF prevention behavior in older adults. Correlational analysis used the Spearman rho test to determine the magnitude of the relationship. Between social support and family resilience with DHF prevention for older adults both as a whole and in terms of accompanying indicators. This research has received ethical permission from the Andalas University Research Ethics Committee, number 173.laiketik. KEPKFKEPUNAND/2022.

RESULTS

In this study, we present Table 1, which provides a snapshot of the characteristics of the respondents based on their gender and age. The table highlights the distribution of respondents among different gender categories, with 25 individuals identified as male, 26.04% of the total respondents, and 71 individuals identified as female, representing 73.96%. Additionally, the table shows the age distribution, showcasing two age groups: 60-65 years and 66-70 years. Among the respondents, 66 individuals fall within the 60-65 age range, accounting for 68.75%, while 30 individuals fall within the 66-70 age range, constituting 31.25% of the total sample size. It is important to note that these demographic characteristics serve as essential contextual information, enriching our understanding of the study population and facilitating a nuanced analysis of the subsequent findings.

The description of social support, family resilience, and DHF prevention behavior in older adults is in a suitable category with a percentage of 78% social support, 81.3% family resilience, and 75% DHF prevention behavior. The more dominant social support indicator is instrumental, with the highest good category compared to other indicators, with as many as 78 respondents or 81.30%. The family resilience variable is dominated by communication and relationship indicators through the excellent category, obtained by 82 respondents or 85.40%. The percentage distribution per variable indicator is shown in Table 3 in detail.

In a correlation analysis between social support and family resilience with DHF prevention behavior in Padang City, older adults showed a significant relationship with a significance value of 0.00. Testing using Spearman's rho shows that a perfect correlation with an extreme level of relationship is obtained at the coefficient of social support with a value of 1,000. Furthermore, family resilience shows a strong relationship with a coefficient of 0.64. Partial correlation testing for each indicator also established a solid connection between dengue prevention behavior in older adults in Padang City and the highest correlation level on the instrumental hand, 0.83.

The detailed correlation distribution of each indicator of social support and family resilience with DHF prevention behavior in older adults in Padang City is presented in Table 4. Introducing Table 4, this presentation focuses on the results derived from correlation testing between variables related to social support and elderly family resilience. The table is structured to reveal the interplay between different facets of family support and specific dimensions of family resilience.

Table 1
Characteristics of Respondents Based on Gender and Age

Characteristics	Frequency	(%)
Gender		
Male	25	26.04
Female	71	73.96
	96	100
Age (year)		
60-65	66	68.75
66-70	30	31.25
	96	**100**

Table 2
Social Support, Family Resilience, DHF Prevention Behavior in The Elderly

Variable and Indicator	Not good		Good		Very good	
	F	%	F	%	F	%
Social Support	14	14.60	78	81.30	4	2.40
Informational	23	24	66	68.80	7	7.30
Reward	17	17.70	72	75	7	7.30
Instrumental	11	11.50	78	81.30	7	7.30
Emotional	21	21.90	70	72.90	5	5.20
Family resilience	13	13.50	83	86.50	-	-
Communication and relationship	14	14.60	82	85.40	-	-
Positive framing	20	20.80	73	76	3	3.10
External Resources	17	17.70	75	78.10	4	4.20
DHF prevention behavior in the elderly	24	25	72	75	-	-

Table 3
The Results of Testing The Correlation of Social Support And Family Resilience With DHF Prevention Behavior In The Older Adults

Variables and Indicators	Correlation	
	Significance	Coefficient
Social Support	0.00	0.79
Informational	0.00	0.76
Reward	0.00	0.75
Instrumental	0.00	0.83
Emotional	0.00	0.79
Family resilience	0.00	13.50
Communication and relationship	0.00	14.60
Positive framing	0.00	20.80
External Resources	0.00	17.70

Table 4
The Results of Correlation Testing Between Variables of Social Support And Elderly Family Resilience

Family support	Family resilience		
	Communication and relationship	Positive framing	External resources
Informational	0.47	0.24	0.25
Reward	0.55	0.47	0.35
Instrumental	0.46	0.38	0.46
Emotional	0.71	0.54	0.47

In exploring the correlation coefficients, it is evident that a positive correlation exists between various forms of social support and family resilience. Specifically, within communication and relationships, Informational support demonstrates a correlation coefficient of 0.47, while Reward and Instrumental support show coefficients of 0.55 and 0.46, respectively. Emotional support has the highest correlation coefficient of 0.71, indicating a robust positive association with communication and relationship aspects of family resilience.

Shifting the focus to positive framing within family resilience, Informational, Reward, and Instrumental support exhibit correlation coefficients of 0.24, 0.47, and 0.38, respectively. Emotional support again emerges as a significant contributor with a correlation coefficient 0.54. Finally, examining the association with external resources in family resilience, Informational, Reward, Instrumental, and Emotional support contribute positively, with correlation coefficients of 0.25, 0.35, 0.46, and 0.47, respectively.

DISCUSSION

Family support increases family resilience in overcoming health problems. Family support can help family members minimize their vulnerability to stress and illness (24). The emergence of DHF cases in the community is one of the many triggers for psychological stress for older adults. Still, when the family has an optimistic perception of this situation, older adults achieve optimal resilience. Family support is a form of interpersonal relationship that includes attitudes, actions, and acceptance of family members so that they feel that someone is watching and supporting them (25). Family support is the result of the interaction of family members with certain situations that occur in the family, relationships between family members, and intrapersonal contexts.

Instrumental support is support in which the family is expected to facilitate all the needs of family members, be it biological, psychological, social, or spiritual. Biological needs are basic needs, as well as material needs that must be met (26). Emotional support, information, and appreciation remain components that cannot be separated because these three components of support strengthen how the family supports older adults in carrying out their role in preventing themselves from the potential for DHF transmission.

Family resilience is interpreted as the family's way of dealing with various difficulties, especially when the environmental situation is prone to contracting DHF. Family resilience is also closely related to the capacity of the family to maintain stability and restore the internal conditions of its members. Protective factors and recovery factors work synergistically and alternately to respond to problems so that they succeed in overcoming crises or challenges faced by the family (27). The elderly are the age group with the highest risk of death if exposed to DHF. As you get older, your immune system also decreases and is exacerbated by co-morbidities such as diabetes and heart or kidney disease (23). Considering that family resilience is proven to be correlated with elderly behavior in efforts to prevent DHF, ideally, family resilience is a concern for all parties to continue to maintain it at an optimal level.

A survey of families with TB sufferers found that patients who received high emotional support experienced decreased anxiety (28). For older adults, the family that gives them support dramatically increases their motivation to be active in efforts to prevent disease (29). This emotional support involves expressions of empathy, caring, encouragement, personal warmth, love, and emotional support. The impact of this outpouring of support is a sense of comfort and leads the elderly to believe that they are respected, loved, and protected and that their families are willing to give attention (30).

CONCLUSION

Family support and resilience correlate with DHF prevention behavior by older adults. Emotional support with relational communication has a high correlation, so families are expected to consistently provide empathy and attention as a form of emotional support through communication adapted to older adults' age phase.

CONFLICT OF INTEREST

The authors declare no competing interests.

AUTHOR CONTRIBUTIONS

GS: Conceptualization, Methodology, Software, Writing-Original draft preparation.WF: Data curation, Writing- Reviewing and Editing. LC: Visualization, Investigation. Software, Validation.

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