

## CORRELATIONS STUDY BETWEEN BURDENS AND THE QUALITY OF LIFE IN CAREGIVERS OF DEPENDENT ELDERLY IN PRAWIRODIRJAN VILLAGE

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### ABSTRACT

**Introduction:** Aging is synonymous with decreased body function due to natural factors (aging process) and diseases. The elderly who are unable to do their activities can cause dependence on the caregiver. In carrying out its role, the caregiver has burdens that can affect their life quality.

**Purpose:** To measure the correlation between the burden and the quality of life in caregivers of dependent elderly in Prawirodirjan Sub-district, Gondomanan District, Yogyakarta Municipality.

**Methods:** This study used a cross-sectional method with a total sample of 33 participants. Caregiver burden was measured using the Zarit Burden Interview (ZBI) and Caregiver Reaction Assessment (CRA) questionnaires. Measurements of quality of life were conducted using the WHO QoL BREF questionnaire. Spearman rank correlation analysis was administered to conduct statistical analysis.

**Results:** There were very significant negative correlations between the *caregiver's burden* (ZBI) and WHO QoL BREF physical health domain, psychological domain, social relations domain, and environment domain. There were very significant positive correlations between the caregiver's burden self-esteem caregiver's domain (CRA) and WHO QoL BREF psychological domain. There was a significant negative correlation between the caregiver's burden of the family support domain (CRA) and WHO QoL BREF physical health domain, psychological domain, social relations domain, and environment domain. There was a significant negative correlation between the *caregiver's burden* impacts on the financial domain (CRA) and WHO QoL BREF environment domain. There was a very significant negative correlation between the caregiver's burden of daily schedule impact domain (CRA) and WHO QoL BREF environment domain as well as there was a very significant negative correlation between the caregiver's burden of health impact domain (CRA) and WHO QoL BREF physical health domain.

**Conclusion:** There is a significant correlation between burden and the quality of life of dependent elderly caregivers in Prawirodirjan Village, Gondomanan District, Yogyakarta Municipality. The higher the burden of a *caregiver*, the lower the *caregiver's* quality of life, and conversely.

**Keywords:** Burden, Quality of Life, Elderly, Caregiver

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## INTRODUCTION

Data show that the world's elderly population in 2015 reached 901,597 million (12.2%). Meanwhile, in Asia, it reached 511,361 million (11.5%).<sup>1</sup> Globally, Indonesia plays a significant role in developing the elderly in the world. In 2018, the population of the elderly was 9.27% (24.49 million).<sup>2</sup> Based on this figure, the largest elderly population was in DI Yogyakarta province (12.37%), followed by Central Java province (12.34%), East Java province (11.66%), North Sulawesi province (10.26%), and Bali province (9.68%).<sup>2</sup> Meanwhile, in the same year, Yogyakarta City has a population of 413,961 people with a population of older people of 32,638 (7.88%).<sup>3</sup> This city has 14 subdistricts and 45 villages. Prawirodirjan village is one of the villages in the Gondomanan sub-district, which had 9,365 people in 2018, with a population of elderly ( $\geq 60$  years) of 1,374 people.<sup>4</sup>

The older the person, the decreased body function due to natural factors (aging process) or disease.<sup>5</sup> Changes due to the aging process make the elderly unable to carry out daily activities, so they need help from others or are dependent. People who assist the elderly are called caregivers.<sup>6</sup> The effects of being a caregiver cover physical health problems, mental health problems, lifestyle changes, and economic changes.<sup>6</sup> These effects can be a burden on the life of the caregiver.<sup>6</sup> The burden can be physical, mental, social, and financial.<sup>6</sup> The burden influences the quality of life of caregivers for the elderly.<sup>6</sup> Quality of life is a person's perception of their position in life in terms of cultural context and value system based on their living place.<sup>7,8</sup> Quality of life can be seen from health such as avoiding illness and disability, and physical, mental, and social welfare.<sup>7,8</sup> The high burden of the caregiver will have an impact on the decreasing quality of life.<sup>9</sup>

## METHODS

This study used a quantitative analytic design with a cross-sectional approach. The population was the informal caregiver for the elderly living in Prawirodirjan village, Yogyakarta. It used a consecutive sampling method. The sample was informal caregivers for elderly aged  $\geq 60$  years who were willing to be respondents, informal caregivers who cared for elderly with ADL  $< 12$ , informal caregivers who could communicate, and informal caregivers with good cognitive function when aged  $\geq 60$  and informal caregivers aged  $\geq 18$  years. It involved 33 samples. Sampling was done by filling out the Mini-Mental State Examination (MMSE) questionnaire, Aging and Dementia 8 (AD8), Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), The Zarit Burden Interview (ZBI), Caregiver Reaction Assessment (CRA), and WHOQOL-BREF. Then, the collected data were analyzed using univariate and bivariate methods to determine the correlation between The Zarit Burden Interview (ZBI) and WHOQOL-BREF and the correlation between the Caregiver Reaction Assessment (CRA) and WHOQOL-BREF. Previously, the normality of the data had been tested to determine whether it is normally distributed or not. The normality test used the analytical method of Shapiro-Wilk. Then, data that were not normally distributed were continued analyzed using the Spearman rank correlation analysis method.

## RESULTS

The characteristics of elderly respondents are presented based on gender, age, highest education level, and marital status. Meanwhile, the characteristics of caregiver respondents are described based on age, gender, highest education level, occupation, marital status, the relationship between caregiver and elderly who are treated, starting date caring for the elderly, and length of time caring for the elderly

Table 1. Characteristics of Respondents

Characteristics	Notes	Number (n)	Percentage (%)	
<b>Elderly</b>				
Age	60-64	2	6.1	
	65-69	5	15.2	
	70-74	5	15.2	
	75-79	3	9.1	
	80-84	4	12.1	
	85-89	7	21.2	
	90-94	1	3.0	
	95-99	4	12.1	
Gender	100-104	2	6.1	
	Male	13	39.4	
Highest education level	Female	20	60.6	
	Not attending school	6	18.2	
	Elementary School	9	27.3	
	Junior High School	5	15.2	
	Senior High School	8	24.2	
Marital Status	Higher Education	5	15.2	
	Married	15	45.5	
	Widowed	17	51.5	
Caregiver of Elderly	Divorces	1	3.0	
	Age	25-29	1	3.0
		30-34	2	6.1
		40-44	1	3.0
		45-49	2	6.1
		50-54	9	27.3
		55-59	6	18.2
		60-64	7	21.2
		65-69	2	6.1
	Gender	70-74	2	6.1
		75-79	1	3.0
	Highest Education Level	Male	4	12.1
		Female	29	87.9
	Occupation	Not attending school	1	3.0
		Elementary School	9	27.3
Junior High School		3	9.1	
Senior High School		12	36.4	
Higher Education		8	24.2	
Housewife		16	48.5	
Marital Status	Teacher	1	3.0	
	Employee	2	6.1	
	Entrepreneur	6	18.2	
	Retirement	2	6.1	
	Other	3	9.1	
	Not working	3	9.1	
	Married	27	81.8	
	Single	3	9.1	
	Widowed	2	6.1	
	Divorced	1	3.0	
Relationship with the Elderly	Close family (Husband,wife, child, grandchild)	24	72.7	
	Large family (Relatives,in-law)	6	18.2	
	Non-family (Neighbor,friend, best friend)	3	9.1	
Starting Date Caring for the Elderly (Year)	2000-2004	1	3.0	
	2010-2014	8	24.2	
	2015-2019	24	72.7	
Length of Time Caring for the Elderly (Hours)	1-6	7	21.2	
	7-12	1	3.0	
	19-24	25	75.8	

Measurement of cognitive function in elderly respondents used the MMSE questionnaire. The highest value of the MMSE measurement is 29, while the lowest value is 0. The mean and standard deviation of the respondents' MMSE values is  $10.85 \pm 11.819$ . A total of 21 elderly respondents (12.1%) are classified as having cognitive impairment, four respondents are likely to have cognitive impairment (12.1%), and eight respondents experience normal aging (24.2%).

Measurement of initial cognitive change in elderly respondents used the AD8 questionnaire. The lowest value of the AD8 measurement is 1, while the highest value is 8. The mean and standard deviation values are  $4.85 \pm 2.333$ . Two respondents (6.1%) have no dementia, while 31 respondents (93.9%) have dementia.

Assessment of basic daily activities of elderly respondents used the ADL questionnaire, and it showed the highest value of 11 and the lowest value of 0. The mean and standard deviation of the respondent's ADL values are  $7.94 \pm 3.112$ . Thus, it can be seen that 17 respondents (51.5%) have moderate dependence in carrying out daily activities and 12 respondents (36.4%) have severe dependence, and four respondents (12.1%) are dependent. The assessment of more complex daily activities used the IADL questionnaire with the highest value of 8 and the lowest value of 0. The mean value and standard deviation are  $1.67 \pm 1.848$ . Thus, it can be seen that 23 respondents (69.7%) need others' help in carrying out daily activities, and ten respondents (30.3%) cannot do anything.

The measurement of the caregiver burden used the Zarit Burden Interview (ZBI) and the Caregiver Reaction Assessment (CRA). The ZBI showed the highest value of 30 and the lowest value of 6. The mean value and standard deviation obtained are  $17.18 \pm 8.141$ . Based on these data, it can be

seen that 21 respondents (63.6%) have no or low burdens, while 12 respondents (36.4%) have light to moderate burdens.

The CRA questionnaire is divided into five domains. First, the caregiver self-esteem (SE) domain has the lowest value of 63 and the highest value of 88. The mean value obtained is 76.00, and the standard deviation is 9.131. Second, the family support (LFS) domain has the lowest value of 0 and the highest value of 65. The mean value obtained is 31.21, and the standard deviation is 17.141. Third, the impact on the finance (IF) domain has the lowest value of 8 and the highest value of 75. The mean value obtained is 31.58, and the standard deviation is 15.441. Fourth, the daily schedule (IS) domain has the lowest value of 4 and the highest value of 60. The mean value obtained is 25.45, and the standard deviation is 17.602. Fifth, the impact on health (IH) domain has the lowest value of 0 and the highest value of 50. The mean value obtained is 27.27, and the standard deviation is 11.111.

The measurement of the quality of life of caregivers used the WHOQOL-BREF questionnaire. This questionnaire consists of 4 domains. First, the physical health domain has the lowest 31 and the highest value of 75. The average value obtained is 50.45, and the standard deviation is 10.174. Thus, there are five caregivers (15.2%) with a good quality of life and 28 (84.8%) with poor quality of life. Second, the psychological domain has the lowest value of 44 and the highest value of 69.

The mean value obtained is 58.67, and the standard deviation is 8.634. It can be seen that there are 16 caregivers (48.5%) with a good quality of life and 17 caregivers (51.5%) with a poor quality of life. Third, the social relation domain has the lowest value of 44 and the highest value of 94. The mean value obtained is 61.06, and the standard deviation is 12.341. Thus, 16 caregivers (48.5%) have a good quality of life, and 17 caregivers (51.5%) with a poor quality of life. Fourth, the environmental domain has the lowest value of 19 and the highest value of 81. The mean value obtained is 62.64, and the standard deviation is 12.397. Thus, 22 caregivers (66.7%) have a good quality of life, and 11 caregivers (33.3%) have a poor quality of life.

Table 2. Description and Classification of ZBI Values

	Number (n)	Percentage (%)
<b>Classification of ZBI</b>		
No or low burden	21	63.6
Light to moderate burden	12	36.4
<b>Total</b>	<b>33</b>	<b>100</b>

Table 3. Results of Caregiver Reaction Assessment (CRA)

Domain	Number (n)	Percentage (%)	Mean $\pm$ Std. Deviation	Min – Max
Caregiver Self-esteem (SE)	33	100	76.00 $\pm$ 9.131	63 – 88
Family Support (LFS)	33	100	31.21 $\pm$ 17.141	0 – 65
Impact on Finance (IF)	33	100	31.58 $\pm$ 15.441	8 – 75
Impact on Daily Schedule (IS)	33	100	25.45 $\pm$ 17.602	4 – 60
Impact on Health (IH)	33	100	27.27 $\pm$ 11.111	0 – 50

Table 4. Description and Classification of Quality of Life (WHOQOL-BREF)

	Number (n)	Percentage (%)
<b>Classification of Quality of Life</b>		
<b>Physical Health</b>		
Good	5	15.2
Poor	28	84.8
<b>Psychological</b>		
Good	16	48.5
Poor	17	51.5
<b>Social Relation</b>		
Good	16	48.5
Poor	17	51.5
<b>Environment</b>		
Good	22	66.7
Poor	11	33.3

Table 5. Correlation Test between the Zarit Burden Interview (ZBI) and WHOQOL-BREF

<i>The Zarit Burden Interview</i>		
<b>WHOQOL-BREF</b>	<b>Correlation Coefficient (<math>\rho</math>)</b>	<b>Significance (p)</b>
Physical Health	-,456	,004
Psychological	-,638	,000
Social Relation	-,557	,000
Environment	-,456	,004

Table 6. Correlation Test between Caregiver Reaction Assessment (CRA) and WHOQOL-BREF

<i>Caregiver</i> <b>Reaction</b> <b>Assessment</b> <b>(CRA)</b>	<b>WHOQOL-BREF</b>							
	<b>Physical Health</b>		<b>Psychological</b>		<b>Social Relation</b>		<b>Environment</b>	
	<b>Correlatio</b> <b>n</b> <b>Coefficient</b> <b>(<math>\rho</math>)</b>	<b>p</b>	<b>Correlatio</b> <b>n</b> <b>Coefficient</b> <b>(<math>\rho</math>)</b>	<b>p</b>	<b>Correlation</b> <b>Coefficient</b> <b>(<math>\rho</math>)</b>	<b>p</b>	<b>Correlation</b> <b>Coefficient</b> <b>(<math>\rho</math>)</b>	<b>P</b>
Caregiver Self-esteem (SE)	.137	.223	.659	.000	.197	.136	.269	.065
Family Support (LFS)	-.328	.031	-.415	.008	-.512	.001	-.509	.001
Impact on Finance (IF)	-.168	.175	-.290	.051	-.232	.097	-.370	.017
Impact on Daily Schedule (IS)	-.074	.342	-.200	.132	-.246	.084	-.518	.001
Impact on Health (IH)	-.503	.001	-.132	.232	-.209	.122	-.124	.246

This study found that burden (The Zarit Burden Interview/ZBI) negatively correlates with the quality of life of the elderly (WHOQOL-BREF) in the domains of physical health, psychological, social relationships, and environments. The caregiver does not feel any physical problems that interfere with daily activities when caring for the dependent elderly in the physical health domain. Because the caregiver does not feel a significant burden, the caregiver's quality of life related to physical health is good. Most of the caregiver respondents are young. Young people tend to have a stronger body and have more energy in carrying out daily activities, so they rarely complain of pain.<sup>10</sup> The results of this study are in line with research conducted by Dian Novita Kumalasari in 2017 with a p-value of 0.019, meaning that there is a significant relationship between burden and quality of life of family caregivers who care for dementia patients. The higher the burden of the family caregiver, the lower the quality of life of the family caregiver.<sup>11</sup>

In the psychological domain, the correlation value is negative. It means that the lower the caregiver's burden, the better the caregiver's quality of life in terms of psychological health. The highest education level of most caregivers in Prawirodirjan village is Senior High School. Education can shape a person's emotional intelligence. People with high emotional intelligence can control emotions and motivate themselves. If the emotional intelligence is low, it can affect satisfaction and reduce the quality of life.<sup>12</sup> Another factor affecting a person's psychological welfare is the spiritual condition. Individuals who have a strong spiritual have higher life satisfaction.<sup>13</sup> It is in line with previous research (p-value 0.000), which reveals that if a person can achieve good psychological welfare, it will improve the quality of life.<sup>14</sup>

In the social relation domain, the correlation value is negative. It indicates that the lower the burden, the better the

caregiver's quality of life-related to social relationships. Based on the research, caregivers get a lot of support in caring for the elderly, both provided by family and other caregivers. This support lightens the burden of the caregiver. It is in line with Thoits' opinion that people will benefit from the support they receive from others who have the same problem. It can provide information about useful coping strategies in providing care.<sup>15</sup>

In the environmental domain, the correlation value is negative. It means that the lower the burden, the better the caregiver's quality of life-related to the environment. Based on research, most caregivers have to stop working to care for the elderly, but they can still carry out social activities in their environment to lessen their burden. The results of this study are different from previous studies in which the previous study reveals that caregivers can experience changes in activities in their social environment. The change occurs due to adjustments to working time which reduce social activities in the caregiver's environment.<sup>16</sup>

This study also found that based on the Caregiver Reaction Assessment (CRA) questionnaire, burden correlates with the quality of life of the elderly (WHOQOL-BREF). First, the burden of caregivers' self-esteem domain and the quality of life of the psychological domain shows a positive correlation value. It means that the higher the caregiver's burden related to self-esteem, the better the caregiver's quality of life-related to psychological health. Based on research, most caregivers feel lucky and happy in caring for the elderly, although sometimes they feel emotionally and physically tired. However, it does not prevent them from caring for the dependent elderly. Respondents consider that caring for the elderly is an obligation. It is in line with previous research in which family caregivers feel special, proud, happy, and enjoy caring for their family members. It is

done to return the favor to her husband or parents.<sup>11</sup>

Second, the burden of the family support domain and the quality of life of the physical health domain have a negative correlation value. It indicates that the lower the caregiver's burden related to family support, the better the caregiver's quality of life-related to physical health. Based on the research, caregivers get family support in caring for the dependent elderly. Thus, they will get positive values and face life's challenges better if the family support is high. It is in line with previous research in which health status is significantly related to caregiver's burden and depression level in caring for elderly with dementia.<sup>17</sup> Third, the burden of family support domain and quality of life of psychological domain show a negative correlation. It means that the lower the caregiver's burden related to family support, the better the caregiver's quality of life-related to psychological health. Based on research, the family support obtained by caregivers is attention and enthusiasm. They make the caregiver less stressed in caring for the dependent elderly as caregivers' stress affects their psychological welfare.<sup>19</sup> It is in line with previous research that the higher the family support provided, the higher the perceived psychological welfare.<sup>18</sup> Fourth, the burden of the family support domain and the quality of life of the social relation domain show a negative correlation. The lower the burden related to family support, the better the caregiver's quality of life related to social relationships. Based on the research, most family members do not fully assign caring for the dependent elderly to the caregiver. Still, the caregiver's family works together in caring for the dependent elderly. The cooperation between families leads to good social relations in caring for the elderly. It is suitable with previous research that the higher social relations between families, the less the family burden and vice versa.<sup>20</sup> Fifth, the burden of family support and quality of life in the environmental domain negatively correlate.

It means that the lower the caregiver's burden related to family support, the better the caregiver's quality of life related to the environment. Based on research, most caregivers have to stop working to care for dependent elderly, but other family members still support their financial needs. Moreover, caregivers also have the freedom to carry out activities in Prawirodirjan village regularly, and they feel satisfied with their environment and access to health services. Under previous research, the higher the family support, the lower the care burden and vice versa.<sup>21</sup>

Sixth, the burden of impact on the financial domain and the quality of life in the environmental domain negatively correlate. It means that the lower the caregiver's burden related to the impact on finance, the better the caregiver's quality of life related to the environment. Based on this study, most caregivers have sufficient financial resources to not burden the family's finances in caring for the dependent elderly. Even, there are no difficulties in paying for costs and health services for the needs of the elderly. Other family members still provide financial support, and the government also provides allowances. Previous studies revealed a significant relationship between the burden and the family's ability to care for violent behavior patients ( $p < 0.05$ ). In this case, the burden is caused by socio-economic factors such as financial difficulties, family unemployment, and low education level.<sup>22</sup>

Seventh, the burden of impact on the daily schedule domain and quality of life in the environmental domain negatively correlate. It indicates that the lower the caregiver's burden related to the impact on the daily schedule, the better the caregiver's quality of life related to the environment. Most of the caregivers in Prawirodirjan village have no burden or light burden even though they have provided care for the elderly for hours a day because they get social support from family and the environment around the caregiver's residence. On the other hand, previous



studies revealed that the impact on the schedule domain becomes the heaviest burden experienced by family caregivers. The caregiver must care for the elderly throughout the day to not visit their family's house and do not have time to relax.<sup>11</sup>

Eighth, the impact burden on the health domain and quality of life in the physical health domain show a negative correlation. It indicates that the lower the caregiver's burden related to health, the better the quality of the caregiver's life related to physical health. Even though the caregiver has good physical strength, sometimes they feel tired in caring for the dependent elderly. Caregivers with poor health conditions are more likely to experience a high burden in caring for the elderly than healthy caregivers. It is in line with previous studies which found a significant relationship between the caregiver's health status and the burden of caring for the elderly.<sup>23</sup>

## CONCLUSION

There is a significant correlation between caregivers' burden and quality of life for dependent elderly in Prawirodirjan village of Yogyakarta City. The detailed conclusion of this study is as follow:

1. Burden (The Zarit Burden Interview) has a significant negative correlation with caregivers' quality of life (WHOQOL-BREF) for the elderly in Prawirodirjan village of Yogyakarta City.
2. The burden (Caregiver Reaction Assessment) of caregiver self-esteem (SE) domain has a very significant positive correlation with the psychological domain of quality of life (WHOQOL-BREF) of caregivers for elderly in Prawirodirjan village of Yogyakarta City.

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4. The burden (Caregiver Reaction Assessment) of impact on finance (IF) domain has a significant negative correlation with the environmental domain of quality of life (WHOQOL-BREF) of caregivers for elderly in Prawirodirjan village of Yogyakarta City.

5. The burden (Caregiver Reaction Assessment (IS) of impact on daily schedule has a very significant negative correlation with the environmental domain of quality of life (WHOQOL-BREF) of caregivers for elderly in Prawirodirjan village of Yogyakarta City.

6. The burden (Caregiver Reaction Assessment) of impact on health (IH) domain has a very significant negative correlation with the physical health domain of quality of life (WHOQOL-BREF) of caregivers for elderly in Prawirodirjan village of Yogyakarta City.

This study is expected to increase the knowledge of caregivers of dependent elderly and caregiver families about the possibility of changes in the burden that affect their quality of life so that the family can support the caregiver to lighten their burden. Future studies are expected to use different instruments to make it easier for elderly caregivers to understand to obtain more accurate data. Future studies can further investigate the factors affecting the burden of caregivers of dependent elderly.

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