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SOCIODEMOGRPHIC INFLUENCE ON QUALITY OF LIFE IN CAREGIVERS OF CHRONIC DISSEASE CARE

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ABSTRACT
Chronic illnesses in elderly make them less able to meet their own needs independently and therefore rely on informal caregiver to help them manage their health. Informal caregivers have different demographic characteristics that impact their resilience and coping strategies, leading to a deterioration in quality of life. Objectives to analyse the sociodemographic factors that affect informal caregiver's quality of life of elderly with chronic diseases. Methods: This study was conducted using non-experimental, cross-sectional design. The population consisted of 137 caregivers who care for the elderly with chronic disease with simple random sampling method of 109 respondents. Analysis of the data using logistic regression. Research showed that the majority of elderly caregivers had the good quality of life (49.54%), 44.95% had the moderate quality of life, and 5.5% had the low quality of life. The variable that influenced the quality of life of elderly caregivers is the caregiver experience, with p-value of 0.022 and it was the most influential factor in caregiver quality of life. The community health worker can provide education to families that impact on improving their quality of life.

Keywords: chronic disease; elderly; informal caregiver; sociodemographic; quality of life

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INTRODUCTION

Elderly people have various progressive physical changes which can result in various health problems and chronic diseases such as hypertension and diabetes mellitus. In 2019, 33.1% of people aged 30-79 years in the world had hypertension and 10.1% (5.1 trillion people) aged 20-79 years suffered from Diabetes Mellitus in 2021 (International Diabetes Federation (IDF), 2021). he prevalence of hypertension in Indonesia reached 65% in the population aged > 56 years in 2018, while the percentage for diabetes mellitus was 15% (Kementerian Kesehatan RI, 2019). In East Java, around 105 thousand people suffer from hypertension, and 150 thousand people suffer from Diabetes Mellitus (Kementerian Kesehatan RI, 2019). ased on previous research, it was found that 41% of elderly people had hypertension, 20% had diabetes mellitus, and the rest suffered from heart disease and other chronic diseases in Malang, Indonesia.

Chronic diseases experienced by the elderly with various levels of severity can result in the elderly being less independent in carrying out activities and meeting their own needs. The elderly need someone/their own family to help and support them in managing their health (Schulman-Green et al., 2021). Elderly people who live at home will be cared for by their families or are called informal caregivers, namely someone who provides unpaid care or support to elderly people who need help or who are unable to care for themselves due to long-term health conditions or disabilities.Care for the elderly at home, especially for elderly people with chronic diseases, can increase the burden on caregivers. The high burden felt by informal caregivers can result in a decrease in the level of caregiver resilience or resilience. A

study explains that most caregivers experience a low level of resilience when caring for the elderly (Ong et al., 2018). This was also found in the research site that as many as 53.9% of caregivers felt a high burden based on research we conducted previously (Ati et al., 2023).

Elderly informal caregivers with different characteristics also influence the level of resilience because each individual has different coping mechanisms. Various studies explain that demographic factors such as age, education, economic status, experience, length of interaction influence a person's ability to deal with problems, one of which is the problems experienced by caregivers while caring for the elderly (Lembas et al., 2017). Individuals who can focus on coping strategies in dealing with problems while caring for the elderly can improve their quality of life (Rodríguez-Pérez et al., 2017). Various demographic characteristics such as gender, education level, caregiver's economic status, relationship with the elderly, length of interaction and experience can influence the caregiver's quality of life (Kim & Jang, 2024). Men have a better quality of life than women with the emotional dimension being the most influential dimension resulting in increased anxiety and depression in women who show a low quality of life, being the emotional dimension most affected, with a significant increase in levels of anxiety and depression (Arias-Rojas et al., 2022). Another influencing factor is the length of care for the elderly, where the longer the duration of care for the elderly, the lower the caregiver's quality of life (Franchini et al., 2020);(Frias et al., 2020).

Health-related quality of life (HRQL) focuses on the impact of health on a person's ability to live a healthy life. Changes in the quality of life of caregivers in the form of limitations in carrying out their role due to fatigue, emotional changes, changes in social function, and changes in health status to the emergence of health problems (Faronbi & Olaogun, 2017). The sociodemographic factors of the caregiver are the main factors that must be addressed because they originate from internal factors. Sociodemographic management is the main milestone so that it does not have a negative impact on both the caregiver himself and the elderly being cared for. Negative impacts that can occur include low quality of care provided to the elderly, low life satisfaction, decreased welfare of both caregivers and the elderly being cared for (Hazzan et al., 2022; Rippon et al., 2020).The aim of this study is to analyze sociodemographic factors that influence the quality of life of informal caregivers of elderly people who experience chronic illnesses.

METHOD

This research was quantitative research with a non-experimental design. This research was a cross sectional study, which is aimed at analyzing sociodemographic factors that influence the quality of life of informal caregivers. The population in this study is all informal caregivers, namely someone (family member, relative, friend, neighbor or other person) who cares for 137 elderly people who have chronic dissease. The sampling technique in this research was simple random sampling which requires 103 respondents and the researcher added 10% so that to 113, but the number of respondents in this study was 109 people because at the time of data collection many respondents were not at the research site. There were two groups of variables, namely independent variables and dependent variables. The independent variables in this study include: sociodemography factor which included age, gender, level of education, relationship with the elderly, location status, employment, economic status, length of care, experience. The dependent variable was the quality of life of informal caregivers includes: support for caring, choices when caring for, stress due to caring, financial problems, personal development, self-worth, ability to care, satisfaction in providing care. Data was collected from respondents using a questionnaire to assess the requested variables. This research uses a questionnaire which includes; demographic record questionnaire; and AC-QoL. Researchers conducted validity and reliability tests for AC-QoL. The validity test in this research used the

Product Moment correlation test. Apart from validity testing, a questionnaire also needs to be tested for reliability to show the extent to which a measuring instrument can be trusted or relied upon. The reliability test in the research used the Cronbach's Alpha method. The questionnaire was said to be reliable if the Cronbach's Alpha value is greater than 0.60. Where the results of the reliability test show that the Cronbach's alpha value is 0.948 > 0.60, so that 40 questions related to the quality of life of caregivers are declared reliable and suitable for use. Data analysis processing in this research uses univariate analysis which aims to explain or describe the characteristics of research variables and the multivariate analysis used for this research is Logistic Regression.

RESULT

The sociodemographic description of informal caregivers can be seen in table 1. It appears that most informal caregivers are in the age range of 36-45 years and are dominated by women. There were more respondents with a history of high school/equivalent education than those with D3/S1/S2. Almost all informal caregiver respondents live at home with the elderly so that the average length of interaction with the elderly is >10 hours, and the majority still have blood relations such as biological children, siblings/grandchildren. This research found that the type of private work that is most often done by informal caregivers with an average income of <1.5 million. Table 1 shows that almost half of elderly caregivers have a good quality of life, namely 54 respondents (49.5%) and only 6 respondents (5.5%) have a low quality of life.

Table 1 explains that experience was the factor related to the quality of life of the elderly, where the better the experience of caring for the elderly, the higher the quality of life. This could be seen, namely as many as 23.9 respondents with very good experience (in carrying out total care), also having a high quality of life with a p-value of 0.029 (<0.05), OR = 0.187, and 95% CI = 0.0-0.8. Meanwhile, other factors, such as age, gender, education, employment, relationship with the elderly, place of residence, income and length of interaction had no relationship with p-value >0.05.After carrying out the bivariate analysis, the researchers carried out a multivariate analysis using a logistic regression test which was carried out in several stages. The first stage was to identify covariates. 9 logistic regression analyzes were carried out for each variable: age, gender, education level, relationship with the elderly, residence status, employment, income, length of interaction, and experience of elderly caregivers. After the analysis, in table 1 it could be seen that the variables age, gender, education level, relationship with the elderly, residence status, employment, income and length of interaction have p value > 0.25. However, according to scientific substance considerations, the variables age, level of education, relationship with the elderly, residence status, employment, income, and length of interaction influenced the quality of life of the elderly so that these independent variables were still included in the multivariate model.

The second stage is to assess confounding variables. The confounding variable test is carried out by removing candidate confounding variables one by one starting from the confounding variable that has the largest p value. If there is a change in OR ≥ 10% in each independent variable then that variable is said to be a confounding variable and must remain in the model. The initial modeling results can be seen in table 2.

Table 1.
The Relationship Between Sociodemographic Factors and the Quality of Life of Elderly Caregivers

m,	Caregiver Quality of Life			*P*-value	OR	95% CI
	Low (%)	Medium (%)	High (%)			
Age						
20-25 year	0,9	0,9	6,4	0,456	1,2	0,6 – 2,4
26-35 year	0,9	6,4	8,3			
36-45 year	1,8	17,4	11,9			
46-55 year	0,9	8,3	11,9			
≥ 56 year	0,9	11,9	11			
Gender						
Male	0,9	6,5	9,1	0,992	1,0	0,1 – 9,2
Female	4,6	38,5	40,4			
Education						
Elementary school	0	6,4	4,6	1,000	1	0,3 – 2,5
Junior hifg school	1,8	1,8	1,8			
Senior High School	1,8	22	32,1			
Diploma/ Bachelor/ Master	1,8	14,7	11			
Relationship						
Bilological children	2,8	29,4	32,1	0,704	0,910	0,5 – 1,4
Adopted children	0,9	0,9	0,9			
No relationship	0	5,5	1,8			
Sibling/ grandchildren	0,9	5,5	8,3			
Son/ daughter in law	0,9	1,8	4,6			
Husband/wife	0	1,8	1,8			
Stay with elderly						
Yes	4,6	36,7	47,7	0,652	0,597	0,0 – 5,5
No	0,9	8,3	1,8			
Work						
Private	0,9	15,6	24,8	0,168	0,566	0,2 – 1,2
Civil servant	0	1,8	0,9			
IRT	2,8	20,2	15,6			
Doesn't work	1,8	7,3	8,3			
Income						
<1,5 million	3,7	23,9	33	0,406	1,660	0,5 – 5,4
1,5 – 2,5 million	1,8	11,9	7,3			
>2,5 – 3,5 million	0	3,7	6,4			
>3,5 million	0	5,5	2,8			
Length of Intercation						
1-3 hours	0	11	3,7	0,311	0,576	0,1 – 1,6
4-6 hourss	0	6,4	6,4			
6-10 hour	1,8	4,6	5,5			
>10 hours	3,7	22,9	33,9			
Experience						
Not enogh	0	4,6	7,3	0,029	0,187	0.0 – 0,8
Enough	0	11,9	28,4			
Good	1,8	18,3	20,4			
Very good	2,7	10,1	23,9			

After the confounding variables were removed from the modeling one by one, it turned out that the age and education variables were removed from the model because after being removed, the OR change value in the variables in the model was <10%. So the results obtained are as in table 3 below.

Table 2.
Initial Modeling of Caregiving Sociodemographic Factors that influence the Quality of Life of Elderly Caregivers

Variabel	B	P_{value}	OR	95% CI
Age	0,055	0,877	1,0	0,5 – 2,1
Education	-0,744	0,300	0,4	0,1 – 1,9
Relationship the Elderly	-0,131	0,691	0,8	0,4 – 1,6
Residence Status	-1,493	0,367	0,2	0,0 – 5,7
Work	-0,817	0,151	0,4	0,1 – 1,3
Income	0,301	0,740	1,3	0,2 – 8,0
Length of Interaction	-0,364	0,594	0,6	0,1 – 2,6
Caring Experience	-1,997	0,025	0,1	0,0 – 0,7

Table 3.
Modeling for Assessment of Confounding Variables for Sociodemographic Factors that Influence the Quality of Life of Elderly Caregivers

Variable	P_{value}	OR	95% CI
Education	0,288	0,4	0,1-1,8
Relationship with the	0,684	0,8	0,4-1,6
Elderly	0,382	0,2	0,0-5,5
Residence Status	0,104	0,4	0,1-1,2
Work	0,527	0,6	0,1-2,4
Length of Interaction	0,022	0,1	0,0-7,5
Caring Experience			

The next stage, after assessing confounding variables, is the interaction test. A variable is said to be interacting if it has a pvalue < 0.05. The interaction test in this study was carried out twice, namely the variables residence status*length of interaction and employment*length of interaction. After conducting an interaction test, it was proven that none of the variables in this study interacted with each other because the p value showed >0.05.

Table 4.
Final Modeling of Sociodemographic Factors that influence the Quality of Life of Elderly Caregivers

Variabel	P_{value}	OR	95% CI
Education	0,288	0,4	0,1-1,8
Relationship with the Elderly	0,684	0,8	0,4-1,6
Residence Status	0,382	0,2	0,0-5,5
Work	0,104	0,4	0,1-1,2
Length of Interaction	0,527	0,6	0,1-2,4
Caring Experience	0,022	0,1	0,0-7,5

The results of multivariate analysis showed that the variable that was significantly related to the quality of life of elderly caregivers was caring experience. Meanwhile, the variables of the caregiver's education level, the caregiver's relationship with the elderly, the caregiver's residence status, the caregiver's occupation, and the length of the caregiver's interaction with the elderly proved to be confounding variables in this study.

DISCUSSION

The research that has been carried out shows that the majority of respondents studied have a good quality of life, namely 49.5% of respondents. The quality of life of informal caregivers of elderly people with chronic illnesses is influenced by various factors. Environmental factors can be said to be influential factors because high levels of social support can improve mental health, especially for older caregivers. This is in line with previous research which states that social support perceived by older caregivers is significantly related between perceived social support and mental well-being, self-esteem and stress in elderly female caregivers (Muñoz-Bermejo dkk., 2020). This psychological condition can increase the burden felt so that the caregiver's quality of life decreases. A study states that caregivers who

have low mental resilience can cause the perceived burden to increase, resulting in a lower quality of life for caregivers (Üzar-Özçetin & Dursun, 2020). Table 1 shows that respondents aged 36-45 years (middle adults) and 46-55 years (late adults) have a better quality of life than other age categories (early adults and the elderly). The middle adulthood stage is a stage where the majority of individuals have experienced various changes in their life patterns, one of which is a change in family status from child to parent, which inevitably changes their duties and roles (Jannah et al., 2021). Individuals who are able to adapt and have a good level of resilience would find it easier to carry out their role in the family. One of the criteria for a caregiver with good resilience is being able to accept changes in family patterns by managing the burden they feel so that they are able to carry out their role well (Palacio G et al., 2020; Xu et al., 2024).

The research describes that there is difference quality of life level based on gender. Female respondents has better quality of life than male respondents. In general, women provide care by focusing on emotions so that they can empathize more with the conditions of the elderly being cared for, while men assume that caring for the elderly is a job so that when providing care it is more oriented so that the work is completed quickly. This is in accordance with previous research which states that gender can determine how to organize the care process where women are more sentimental and emotionally oriented, while men use a pragmatic approach that focuses on getting the job done (Zygouri et al., 2021). The quality of life based on relationship show that most of respondents who have relation as biological children, have higher quality of life than others. Biological children have a very close relationship with their parents, have higher emotional strength than others because of feelings of love for their parents. This condition causes children to have more sincere feelings in caring for their parents with the hope that their parents' health can be optimal because they are the source of their motivation. This is in accordance with previous research which stated that their parental care as a form of role reversal and their responsibility, and also emphasizes lifelong emotional bonds that serve as powerful motivators (Lewis & Meredith, 2024; Shekhani, 2024).

Based on the nine sociodemographic factors in this study, there is only 1 factor that influences the caregiver's quality of life, namely experience. In this case, the experience in question focuses on qualitative experience, such as events experienced when caring for elderly people who have chronic illnesses in meeting their basic needs. Caregivers who care for elderly people with a heavy activity level (total) have a high quality of life, namely 28.4% of respondents. Caregivers with these characteristics must have gone through various difficulties in the beginning when caring for the elderly, which means that the caregiver is able to survive and is able to use adaptive coping strategies in dealing with every unique behavior of the elderly who have experienced a decline in both psychological and physiological conditions. This is in accordance with previous research which states that caregivers who apply adaptive coping strategies in caring for the elderly have a high quality of life (Amonoo et al., 2023). Meanwhile, other variables in this study did not have an influence on caregivers' quality of life, possibly because the research location had received several health information and education regarding the management of elderly people suffering from various chronic diseases, including psychological management when caring for the elderly. In line with previous research which states that the knowledge transmitted by health workers to the community in general influences the quality of life of informal caregivers (Seangpraw & Ong-Artborirak, 2020).

Table 3 shows that the variable relationship with the elderly has the highest p-value and caregivers who have a relationship with the elderly either as a biological child, adopted child, partner (husband/wife), sibling/grandchild or no relationship at all still have a good quality of

life. good (table 1). This proves that almost all respondents' characteristics have good responsibility, and can give love and attention to the elderly they care for regardless of who the elderly person is caring for. This is in accordance with other research which states that love and other emotions are still present even though the caregiver is worried about how to manage daily life now and what will happen in the future (Jarling et al., 2020)

CONCLUSION

The sociodemographic factor that influences the quality of life of informal caregivers is experience with a p-value of 0.022, while other factors have no effect on the quality of life of caregivers. The author suggests that community health centers play a role in optimizing the quality of life of elderly caregivers, and it is hoped that health cadres will also provide education to families about caring for elderly people with chronic diseases so that they can increase the experience of caregivers which has an impact on improving their quality of life.

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