

# Self-Perceived Burden, Social Support, and Quality of Life Among Elderly with Hypertension

<sup>1</sup>Gilang Dwi Pratiwi\*, <sup>1</sup>Putri Putri, <sup>1</sup>Vita Lucy, <sup>1</sup>Herdiman Herdiman

<sup>1</sup>School of Nursing PPNI Jawa Barat, Bandung, Indonesia



Proceeding STIKep PPNI Jawa Barat

## Website :

<https://proceedings.stikep-ppnijabar.ac.id/index.php/psi>

Volume 1 (1), 84-92

## Article info

Received : December 28, 2024  
Revised : April 22, 2025  
Accepted : May 02, 2025  
Published : May 19, 2025

## Corresponding author

Gilang Dwi Pratiwi\*  
Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat, Bandung, Indonesia  
Jl. Muhammad No 34 Bandung, Indonesia  
Email: [gilangdwipratiwi@gmail.com](mailto:gilangdwipratiwi@gmail.com)

## Citation

Pratiwi, G. D., Putri, P., Lucy, V., & Herdiman. (2025). Self-perceived burden, social support, and quality of life among elderly with hypertension. *Proceeding STIKep PPNI Jawa Barat*, 1(1), 84-92.

This is an **Open Access** article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License



## INTRODUCTION

Hypertension (HTN) is considered a significant risk factor for cardiovascular problems (Zhang et al., 2020) and the primary cause of premature mortality globally (Collaborators GBD Causes of Death, 2018; World Health Organization, 2023). The prevalence of hypertension continues to increase worldwide. In terms of regional comparison, the proportion of people with hypertension is increasing in the western pasific region and southeast Asia region (World Health Organization, 2023). According to the report, there were only 54% of persons with hypertension are diagnosed, 42% receive therapy, and just 21% have hypertension

## Abstract

**Objective:** Self-perceived burden, social support, and quality of life are important aspects of understanding the well-being of the elderly with hypertension. This study aimed to explore the relationship between self-perceived burden, social support, and quality of life among the elderly with hypertension.

**Method:** This descriptive quantitative study with a correlational design included 235 hypertensive older adults using a convenience sampling method. The data were collected using the Indonesian version of the SPBS, the MSPSS, and the WHOQOL-OLD. Spearman's correlation and multiple linear regression analyses were performed in this study.

**Results:** The study revealed that the SPBS score of the elderly with hypertension was negatively correlated with the QoL ( $P < 0.05$ ); on the other hand, the MSPSS score was positively correlated with the QoL ( $p < 0.05$ ). The multivariate analysis showed that the MPSS was the most significant variable in the quality of life of the hypertensive elderly.

**Conclusion:** Self-perceived burden and social support were significantly associated with quality of life among elderly individuals with hypertension. Higher perceived burden correlated with lower quality of life, while greater social support was linked to better well-being, emphasizing the importance of psychosocial factors in managing chronic conditions in older adults.

**Keywords:** hypertension, elderly, self-perceived burden, social support, quality of life

under control (World Health Organization, 2023). Therefore, the actual figure may be significantly greater than the recorded amount.

As the world's older population grows, the prevalence of Hypertension among the elderly continues to incline. Globally, hypertension affects 63.5% of the elderly aged 55-74 and 67.4% of those aged 75 and up (World Health Organization, 2020). In indonesia, the prevalence of hypertension in the elderly was 31.7% of the population (Kementrian Kesehatan RI, 2022), making it the most enormous HTN prevalence in Southeast Asia country (Alfaqeeh et al., 2023).

The quality of life among the elderly frequently diminishes with advancing age and the onset of degenerative diseases. A meta-analysis of 20 observational studies found that the quality of life of people with hypertension is lower compared to non-hypertension (Q. Chen et al., 2021; Trevisol et al., 2011). Along with the ageing process, individuals may experience a decline in living function that causes frailty (Papathanasiou et al., 2021), and the progression of the disease limits their self-care capabilities and movement (M. Z. Chen et al., 2024).

Elderly people who suffer from hypertension may experience several issues related to their quality of life, such as lack of independence, physical and psychological health, social engagement, and family function (Bandyah, 2015). Their regular activity will be disrupted due to their inability and dependence, as well as the costs associated with medical care. According to the previous study, this issue impacted not only the spiritual, psychological, social, and family components but also their physical, cognitive, and emotional aspects (Wahyuni et al., 2018).

The frail condition of the elderly, along with the prevalence of chronic diseases, results in decreased independence (Boyer et al., 2022; Setiati et al., 2021). In other health domains, it is apparent that receiving care may lead individuals to consider themselves "a burden to others.". The notion of "self-perceived burden" (SPB), as defined by Cousineau et al. (2003), is important due to its potential effects on caregiving relationships and individuals' adaptation to the functional and psychosocial changes associated with their disabilities (Oeki et al., 2012). Their changed roles within families and society also impacted their health management, hence maintaining their vulnerability.

Self-perceived burden (SPB) refers to unpleasant emotions such as anxiety, despair, and loneliness, which are induced by physical concern regarding sickness and psychological stress (Genelin et al., 2023). SPB is characterized by feelings of guilt, reliance, and fear of burdening others during the caregiving process (M. Z. Chen et al., 2024). SPB is commonly reported in advanced diseases among patients receiving palliative care for

cancer, stroke, or chronic disease (M. Z. Chen et al., 2024; Kuharic et al., 2024). Recent studies have found that SPB among elderly patients with chronic disease arises due to frailty (M. Z. Chen et al., 2024).

The self-perceived burden can negatively affect patients' sense of dignity and well-being, impacting their quality of life (Xiaodan et al., 2022). The decreasing function among older adults with chronic disease may be mitigated by lowering the self-perceived burden through perceived social support. Previous studies found that older adults' quality of life was associated with family and social community support (Samadarshi et al., 2022). This literature suggests that embedding into a supportive social network (Mehrotra & Wagner, 2018) is a protective buffer when certain events challenge adults' perceptions and evaluations of their ageing. Moreover, recent findings showed that involvement in informal social activities predicted more positive change in the Self-perception of ageing (Schwartz et al., 2021).

Changes in physiological function impact older perceptions, experiences, and adaptation levels, which may also affect the quality of life (M. Z. Chen et al., 2024). However, few studies have explored the issue of quality of life with concern specifically connected with self-perceived burden and perceived social support. Despite the qualitative data indicating that symptom prevalence burden (SPB) impacts the quality of life (QOL), there are only a limited number of papers accessible that there are only a limited number of papers utilizing a quantitative self-report tool to evaluate SPB in this population.

## **METHOD**

### **Design and Sampling**

The present study was quantitative research using a correlational design, conducted from April to June 2024. The subjects were selected using purposive sampling from a Private Clinic in Kabupaten Bandung, Indonesia. The sample size of 253 was calculated using *g-power* calculations. Inclusion criteria included the elderly over 60 who had been diagnosed with hypertension for at least 6 months, who were cooperative, and who were willing to participate as respondents. The seniors who

had disabilities had severe cognitive impairment, and were unable to communicate were excluded.

### Instruments

The data-collecting method used three questionnaires, which are the WHOQOL-OLD (*World Health Organization Quality of Life Old*), the SPBS (*Self-perceived Burden Scale*), and the MSPSS (*Multidimensional Scale of Perceived Social Support*). The WHOQOL-OLD was a 24-item questionnaire to evaluate participants' quality of life. It has been translated into an Indonesian version, with an overall validity of 0.73 and an overall reliability of 0.75 (Gondodiputro et al., 2021). The total Quality of Life (QoL) score ranges from 24 to 120, with higher scores indicating a better quality of life. The SPBS was used to assess the perception of being a burden. It consists of 10 items with a scale ranging from 1 – 5. The reliability and validity values were 0.85 and 0.95 (Natalie Janine Cousineau, 2000). The SPBS was translated into the Indonesian version with item CVI values of 0.83. The social support aspect was evaluated by measuring the self-perceived social support using the MSPSS questionnaire. It is a 12-item scale with a 4-point Likert scale, from strongly agree to strongly disagree, that assesses the perceived social support of caregivers, including significant others, family, and friends. The Indonesian version was developed with good reliability values of 0.85 and validity values of

0.95 (Sulistiani & Febrian Kristiana, n.d.; Winahyu & Hemchayat, 2015).

### Statistical analysis

Data was processed using the SPSS-22 program. Demographic characteristics, Quality of Life, Self-perceived burden score, and perceived social support score were analyzed using univariate descriptive analysis. The correlation analysis explored the correlation between the SPB, MPSS, and QoL scores. The bivariate analysis was run after the normality data test was performed.

### Ethical Consideration

Data collection commenced after obtaining ethical clearance from the Institutional Review Board. Participant identities were kept confidential, and they retained the right to withdraw from the research process at any time.

### RESULT

The demographic characteristics of this study are described in the table below (table 1). The study revealed that most subjects were 60 to 72 years old, with a mean age of 64.2. The mean duration of hypertension was 7.6 years. Most of the participants were female (53.8%), married (87%), attained primary school level (49.4%), not working (68%), had a source of income from a spouse (41.1%), and were taken care of by children (52.2%).

**Table 1. Characteristics of respondents (n=253)**

Variables	n	(%)	Min-max	Mean ± SD
<b>Age</b>			60 - 72	64.2 ± 3.35
<b>Duration of Hypertension (years)</b>			1 - 17	7.6 ± 4.72
<b>Gender</b>				
Male	117	46.2		
Female	136	53.8		
<b>Education level</b>				
Not attending school	6	2.4		
Primary school	125	49.4		
Junior high school	79	31.2		
Senior High school	39	15.4		
College	4	1.6		
<b>Marital status</b>				

Single	0	0
Married	220	87
Widowed/widower	33	13
<b>Occupational activity</b>		
Working	81	32
Not working	172	68
<b>Source of income</b>		
Children	68	26.9
Spouse	104	41.1
Own self	81	32
<b>Caregiver person</b>		
Children	132	52.2
Spouse	104	41.1
Own self	17	6.7

The study findings indicated that most participants reported a moderate level of quality of life (66%), perceived moderate social support (72.3%), and experienced feelings of being a burden (64%), as outlined in Table 2.

**Table 2. The descriptive statistics of variables**

Variables	Frequency	%
<b>Quality of Life</b>		
Low Level	20	7.9
Fair Level	167	66
High Lever	66	26.1
<b>Social support</b>		
Low	21	8.3
Moderate	183	72.3
High	49	19.4
<b>Self-perception of Burden</b>		
High feeling of being a burden	162	64
Low feeling of being a burden	91	36

According to Table 3, an analysis of correlation using the Spearman test showed that Self-perceived burden and social support (family support, friends' support, and other support) significantly correlated with quality of Life among participants.

**Table 3. Correlation analysis of variables**

Variable <sup>a</sup>	Quality of Life	
	Correlation Coefficient	p-value
Self-perceived burden	- 0.585**	0.000
Perceived Social support (overall)	0.578**	0.000
Family support-subscale	0.576**	0.000
Friends subscale	0.644**	0.000
Others subscale	0.471**	0.000

\*\* $p < 0.05$  (2-tailed)

<sup>a</sup>Spearman test

As presented in Table 4, the regression analysis revealed that all independent variables collectively demonstrated a significant association with quality of life ( $p = 0.000$ ). Among these, perceived social support emerged as the most significant predictor.

**Table 4. Linear regression among dependent variable and Quality of Life (N=253)**

<b>Variable</b>	<b>coefficient</b>	<b>Std. Error</b>	<b>F</b>	<b>Sig.</b>
Self-perceived Burden	-0.174**	0.058	135.33	0.000
Perceived Social support	0.606**	0.045		

R = 0.721  
R<sup>2</sup> = 0.520  
Adjusted R<sup>2</sup> = 0.516

\*\**p*<0.05

## DISCUSSION

The current study examined the relationship between self-perceived burden, social support, and quality of life among the elderly with hypertension. This study reported that the pairwise correlation was significant among the factors. The SPB was significantly correlated with quality of life, and perceived social support also revealed the same. Regarding the Self-Perceived burden outcomes, the current study reported that most respondents had a high level of SPB. It is similar to the previous study reported that elderly patients with hypertension combined with coronary heart disease (CHD) revealed that a majority of these patients experience mild to moderate levels of SPB (Qing et al., 2021).

Self-perceived burden (SPB) plays a critical role in influencing both health outcomes and the overall quality of life (QoL) among older adults. Individuals who view themselves as a burden to others often experience a significant decline in QoL, as this internalized strain can amplify psychological distress and contribute to the worsening of both physical and mental health conditions (M. Z. Chen et al., 2024; Ting et al., 2020). These findings align with earlier research indicating that elevated levels of SPB are strongly associated with increased symptoms of depression and anxiety (Kuo et al., 2018; Lin et al., 2019). Importantly, SPB is not solely a psychological concern—it has tangible effects on individuals' overall well-being. Feelings of burden may exacerbate emotions of helplessness, social withdrawal, and dependence on others, which in turn can further compromise one's quality of life and sense of autonomy (Dargahi et al., 2023).

The impact of SPB on QoL is not limited to a single type of illness but spans various chronic conditions. For example, SPB mediated the relationship between disease uncertainty and quality of life among patients with chronic leukemia, accounting for 22.9% of the total (Yeung et al., 2019). Similarly, in urologic cancer patients, a high prevalence of SPB was observed, which was significantly associated with lower health-related QoL (Ting et al., 2020). These studies emphasize that SPB is a prevalent concern among many populations, and its management is essential for improving patient outcomes. The consistent results indicating that SPB adversely affects QoL implies that therapies designed to mitigate SPB may be widely applicable and advantageous.

In terms of perceived social support, this study reported a significant correlation between social support and quality of life ( $r = 0.578$ ,  $p < 0.05$ ). The greater the PSS score, the higher the QoL level. The results were similar to the previous study, which revealed that a higher PSS score would increase the quality of life among the elderly (M. Z. Chen et al., 2024). Another research indicates that elderly hypertensive patients who receive higher levels of social support report better overall QoL than those with lower levels of support (Chantakeeree et al., 2022). Perceived social support plays a crucial role for older with chronic conditions to alleviate stress, obtain support, and feel happy emotions stemming from specific cognitive processes (Lestari et al., 2021; Wang et al., 2022). Moreover, among patients who receive long-term treatment, social support facilitates adherence, positively influencing their quality of life (Shahin et al., 2021).

The type and source of social support can broadly influence several dimensions of quality of life. Family support has been demonstrated to enhance emotional well-being by elevating positive affect and diminishing negative affect in elderly hypertension patients (Wang et al., 2022). Moreover, support from friends is also significantly linked to cognitive well-being, indicating that various social interactions influence the mental health and general quality of life of elderly adults with hypertension (Lestari et al., 2021). This comprehensive understanding emphasizes the necessity of cultivating varied social support networks to meet the complex requirements of this community.

In addition to its correlation on QoL and self-perceived burden, social support may serve as a mediating factor that alleviates self-perceived burden, thereby enhancing overall quality of life (M. Z. Chen et al., 2024). Studies suggest that perceived social support suggests a slight, negative correlation with subjective load, indicating that higher levels of perceived support are associated with lower levels of subjective burden (del-Pino-Casado et al., 2018). Thus, this is important for older individuals with chronic conditions such as hypertension since the alleviation of perceived burden can enhance psychosocial well-being. Overall, enhancing perceived social support can be valuable to improve the QoL and reduce the self-perceived burden among elderly individuals with hypertension.

## CONCLUSION

This study highlights the complex and interrelated roles of self-perceived burden (SPB), perceived social support (PSS), and quality of life (QoL) in elderly individuals diagnosed with hypertension. The findings suggest that when older adults perceive themselves as a burden to others, it can negatively impact their emotional well-being and overall QoL. Conversely, strong social support—whether emotional, instrumental, or informational—can buffer the adverse effects of chronic illness and promote greater life satisfaction. These results emphasize the importance of holistic care approaches that address not only physical health, but also

psychosocial dimensions. Health professionals, caregivers, and policymakers should prioritize interventions that reduce SPB while strengthening support networks. Future research employing longitudinal or experimental designs is warranted to explore causal relationships and to evaluate the effectiveness of targeted psychosocial interventions in improving QoL in this vulnerable population.

## Acknowledgment

We extend our gratitude to all participants for their involvement in this study.

## Conflict of interest

All authors declare no conflict interest.

## REFERENCES

- Alfaqueh, M., Alfian, S. D., & Abdulah, R. (2023). Factors Associated with Hypertension Among Adults: A Cross-Sectional Analysis of the Indonesian Family Life Survey. *Vascular Health and Risk Management*, 19(November 2023), 827–836. <https://doi.org/10.2147/VHRM.S438180>
- Bandiyah, S. (2015). *Lanjut Usia dan Keperawatan Gerontik*. Nuha Medika.
- Boyer, S., Trimouillas, J., Cardinaud, N., Gayot, C., Laubarie-Mouret, C., Dumoitier, N., Rudelle, K., Druet-Cabanac, M., Laroche, M. L., & Tchalla, A. (2022). Frailty and functional dependence in older population: lessons from the FREEDOM Limousin – Nouvelle Aquitaine Cohort Study. *BMC Geriatrics*, 22(1), 1–10. <https://doi.org/10.1186/s12877-022-02834-w>
- Chantakeeree, C., Sormunen, M., Estola, M., Jullamate, P., & Turunen, H. (2022). Factors Affecting Quality of Life among Older Adults with Hypertension in Urban and Rural Areas in Thailand: A Cross-Sectional Study. *International Journal of Aging and Human Development*, 95(2), 222–244. <https://doi.org/10.1177/00914150211050880>

- Chen, M. Z., Chen, X. L., Xu, Q., Cao, X. D., Wang, M. Y., & Cao, R. (2024). Mediating the Role of Perceived Social Support Between Frailty and Self-Perceived Burden in Elderly Patients with Diabetes. *Patient Preference and Adherence*, *18*, 745–752. <https://doi.org/10.2147/PPA.S452648>
- Chen, Q., Ran, L., Li, M., & Tan, X. (2021). Health-related quality of life of middle-aged and elderly people with hypertension: A cross-sectional survey from a rural area in China. *PLOS ONE*, *16*(2), e0246409. <https://doi.org/10.1371/journal.pone.0246409>
- Collaborators GBD Causes of Death. (2018). Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet (London, England)*, *392*(10159), 1736–1788. [https://doi.org/10.1016/S0140-6736\(18\)32203-7](https://doi.org/10.1016/S0140-6736(18)32203-7)
- Dargahi, S., Pireinaladin, S., Ahmadboukani, S., Bashirgonbadi, S., Molaei, B., & Fathi, D. (2023). The Role of Perceived Burdensomeness, Thwarted Belongingness, and Giving Meaning to Life in Psychosocial Adjustment: The Mediating Role of Self-Care in the Elderly. *Iranian Journal of Psychiatry*, *18*. <https://doi.org/10.18502/ijps.v18i2.12365>
- del-Pino-Casado, R., Frías-Osuna, A., Palomino-Moral, P. A., Ruzafa-Martínez, M., & Ramos-Morcillo, A. J. (2018). Social support and subjective burden in caregivers of adults and older adults: A meta-analysis. *PLoS ONE*, *13*(1), 1–18. <https://doi.org/10.1371/journal.pone.0189874>
- Genelin, M. P., Helmkamp, L. J., Steiner, J. F., Maertens, J. A., Hanratty, R., Vupputuri, S., Havranek, E. P., Dickinson, L. M., Blair, I. V., & Daugherty, S. L. (2023). Patient Pill Organization Strategies and Adherence Measured in a Cross-Sectional Study of Hypertension. *Patient Preference and Adherence*, *17*(March), 817–826. <https://doi.org/10.2147/PPA.S399693>
- Gondodiputro, S., Wiwaha, G., Lionthina, M., & Sunjaya, D. K. (2021). Reliability and validity of the Indonesian version of the World Health Organization quality of life-old (WHOQOL-OLD): a Rasch modeling. *Medical Journal of Indonesia*, *30*(2 SE-Community Research), 143–151. <https://doi.org/10.13181/mji.oa.215065>
- Kementrian Kesehatan RI. (2022). *Profil Kesehatan Indonesia 2022. Kementerian Kesehatan Republik Indonesia, Jakarta.*
- Kuharic, M., Sharp, L. K., Turpin, R. S., Mulhern, B., Lee, T. A., Grace Rose, C. E., Monteiro, A., & Pickard, A. S. (2024). Care recipient self-perceived burden: Perspectives of individuals with chronic health conditions or personal experiences with caregiving on caregiver burden in the US. *SSM - Qualitative Research in Health*, *5*, 100398. <https://doi.org/https://doi.org/10.1016/j.ssmqr.2024.100398>
- Kuo, S.-C., Chou, W.-C., Hou, M.-M., Wu, C.-E., Shen, W.-C., Wen, F.-H., & Tang, S.-T. (2018). Changes in and modifiable patient- and family caregiver-related factors associated with cancer patients' high self-perceived burden to others at the end of life: A longitudinal study. *European Journal of Cancer Care*, *27*(6), e12942. <https://doi.org/10.1111/ecc.12942>
- Lestari, S. K., de Luna, X., Eriksson, M., Malmberg, G., & Ng, N. (2021). A longitudinal study on social support, social participation, and older Europeans' Quality of life. *SSM - Population Health*, *13*, 100747. <https://doi.org/https://doi.org/10.1016/j.ssmph.2021.100747>
- Lin, Q., Fu, M., Yang, L., Wu, J., Wang, H., & Zhang, X. (2019). Mental health is as important as physical health: The degree and influencing factors of self-perceived burden in elderly patients with essential hypertension. *Nursing Communications*, *3*(1), 27. <https://doi.org/10.53388/tmrin20181108>
- Mehrotra, C. M., & Wagner, L. S. (2018). Age-Related Change in Self-Perceptions of Aging: Longitudinal Trajectories and

- Predictors of Change. *Aging and Diversity*, 102–160.  
<https://doi.org/10.4324/9781315628097-3>
- Natalie Janine Cousineau. (2000). Cousineau-original. *Masters Abstracts International*, 39–05, 1378.  
<https://doi.org/http://dx.doi.org/10.20381/ruor-7419>
- Oeki, M., Mogami, T., & Hagino, H. (2012). Self-perceived burden in patients with cancer: Scale development and descriptive study. *European Journal of Oncology Nursing*, 16(2), 145–152.  
<https://doi.org/10.1016/j.ejon.2011.04.010>
- Papathanasiou, I. V, Rammogianni, A., Papagiannis, D., Malli, F., Mantzaris, D. C., Tsaras, K., Kontopoulou, L., Kaba, E., Kelesi, M., & Fradelos, E. C. (2021). Frailty and Quality of Life Among Community-Dwelling Older Adults. *Cureus*, 13(2), 1–9.  
<https://doi.org/10.7759/cureus.13049>
- Qing, W., Qi, Z., Yao, H., Xin, J., & Ying, H. (2021). Elderly patients with hypertension self-perceived of aging status and compliance with medical behaviour. *Psychology, Health & Medicine*, 26(10), 1206–1218.  
<https://doi.org/10.1080/13548506.2020.1800056>
- Samadarshi, S. C. A., Taechaboonsersak, P., Tipayamongkhogul, M., & Yodmai, K. (2022). Quality of life and associated factors amongst older adults in a remote community, Nepal. *Journal of Health Research*, 36(1), 56–67.
- Schwartz, E., Ayalon, L., & Huxhold, O. (2021). Exploring the Reciprocal Associations of Perceptions of Aging and Social Involvement. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 76(3), 563–573.  
<https://doi.org/10.1093/geronb/gbaa008>
- Setiati, S., Soejono, C. H., Harimurti, K., Dwimartutie, N., Aryana, I. G. P. S., Sunarti, S., Budiningsih, F., Mulyana, R., Dwipa, L., Sudarso, A., Rensa, R., Istanti, R., Azwar, M. K., & Marsigit, J. (2021). Frailty and Its Associated Risk Factors: First Phase Analysis of Multicentre Indonesia Longitudinal Aging Study. *Frontiers in Medicine*, 8(April), 1–8.  
<https://doi.org/10.3389/fmed.2021.658580>
- Shahin, W., Kennedy, G. A., & Stupans, I. (2021). The association between social support and medication adherence in patients with hypertension: A systematic review. *Pharmacy Practice*, 19(2), 1–8.  
<https://doi.org/10.18549/PharmPract.2021.2.2300>
- Sulistiani, W., & Febrian Kristiana, I. (n.d.). VALIDATION OF THE INDONESIAN VERSION OF THE MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT (MSPSS): A RASCH MODEL APPROACH. In *Jurnal Psikologi* (Vol. 21, Issue 1).
- Ting, C. Y., Teh, G. C., Yu, K. L., Alias, H., Tan, H. M., & Wong, L. P. (2020). Self-perceived burden and its associations with health-related quality of life among urologic cancer patients. *European Journal Cancer Care*, 1–12.  
<https://doi.org/10.1111/ecc.13248>
- Trevisol, D. J., Moreira, L. B., Kerkhoff, A., Fuchs, S. C., & Fuchs, F. D. (2011). Health-related quality of life and hypertension: a systematic review and meta-analysis of observational studies. *Journal of Hypertension*, 29(2), 179–188.  
<https://doi.org/10.1097/HJH.0b013e328340d76f>
- Wahyuni, P., Miro, S., & Kurniawan, E. (2018). Hubungan Lama Menjalani Hemodialisis dengan Kualitas Hidup Pasien Penyakit Ginjal Kronik dengan Diabetes Melitus di RSUD Dr. M Djamil Padang. *Jurnal Kesehatan Andalas*, 7(4).
- Wang, C., Sun, Y., Chen, T., & Han, B. (2022). The association between social support and mental health in the elderly with hypertension. *Proc.SPIE*, 12458, 124582L.  
<https://doi.org/10.1117/12.2660746>
- Winahyu, K. M., & Hemchayat, M. (2015). Factors Affecting Quality of Life among Family Caregivers of Patients with Schizophrenia in Indonesia Characteristics of Patients, Self-Efficacy and Quality of Life among Patients with

- Type 2 Diabetes Mellitus View project  
Type 2 Diabetes Mellitus View project.  
*Article in Journal of Health Research.*  
<https://doi.org/10.14456/jhr.2015.52>
- World Health Organization. (2023). *Global report on hypertension: the race against a silent killer.*  
<https://www.who.int/publications/i/item/9789240081062>
- Xiaodan, L., Guiru, X., Guojuan, C., & Huimin, X. (2022). Self-perceived burden predicts lower quality of life in advanced cancer patients: the mediating role of existential distress and anxiety. *BMC Geriatrics*, 22(1), 1–8.  
<https://doi.org/10.1186/s12877-022-03494-6>
- Yeung, N. C. Y., Lu, Q., & Mak, W. W. S. (2019). Self-perceived burden mediates the relationship between self-stigma and quality of life among Chinese American breast cancer survivors. *Supportive Care in Cancer*, 27(9), 3337–3345.  
<https://doi.org/10.1007/s00520-018-4630-2>
- Zhang, H., Li, S., Chen, G., Abdulai, T., Liu, X., Wang, Y., Liang, H., Hou, J., Huo, W., Mao, Z., Wang, C., & Bie, R. (2020). Ambient air pollutants aggravate association of snoring with prevalent hypertension: results from the Henan Rural Cohort. *Chemosphere*, 256, 127108.  
<https://doi.org/10.1016/j.chemosphere.2020.127108>