Health Status of Older Adults with Hypertension after Family and Cadre Empowerment through Comprehensive Care

Komang Ayu Henny Achjar[1], Lita Heni Kusumawardani[2], Sri Astiti Padma Parashita[1]
[1]Health Polytechnic, Ministry of Health, Denpasar, Indonesia
[2]Faculty of Health and Sciences, Jendral Soedirman University, Indonesia
Email: komangayuhenny@gmail.com

Abstract

A decrease in both physiological and psychological functioning in older adults necessitates a family's assistance to improve their health status in order to maintain the condition and care of older adults with degenerative diseases that are often experienced with hypertension. Hypertensive management consists of pharmacological and non-pharmacological therapy which requires dynamic treatment. The purpose of this research is to determine the effects of family and cadre empowerment on older adults with hypertension's health status in Bali Province. The method used pre-post-test quasi experiment with control group design and it involved 62 older adult respondents and family in the province of Bali. Data was analysed by dependent and independent t-test as well as double logistic regression test. Analysis results showed there was a significant influence from the intervention on older adult health status. The multivariate test also discovered that the age of the older adult also affects the increase in older adult health status. It is expected that this program can be implemented in health services and developed into a more dynamic program.

Keywords: Empowerment, health status, older adult.

Abstrak

Penurunan fungsi fisiologis dan psikologis pada lansia memerlukan pendampingan keluarga dalam meningkatkan status kesehatannya guna menjaga kondisi dan proses perawatan lansia dengan penyakit degeneratif yang sering dialami seperti hipertensi. Penatalaksanaan hipertensi terdiri dari terapi farmakologis dan nonfarmakologis yang memerlukan penanganan yang dinamis. Tujuan penelitian ini adalah untuk mengetahui pengaruh pemberdayaan keluarga dan kader terhadap status kesehatan lansia dengan hipertensi di Provinsi Bali. Metode yang digunakan adalah pre-post-test quasi eksperimen dengan desain kelompok kontrol dan melibatkan 62 responden lansia dan keluarga di Provinsi Bali. Data dianalisis dengan uji t-dependen dan t-independen serta uji regresi logistik ganda. Hasil analisis menunjukkan adanya pengaruh yang signifikan antara pelaksanaan intervensi terhadap status kesehatan lansia. Berdasarkan hasil uji multivariat diketahui bahwa usia lansia juga mempengaruhi peningkatan status kesehatan lansia. Diharapkan program ini dapat diimplementasikan dalam pelayanan kesehatan dan dikembangkan menjadi program yang lebih dinamis.

Kata kunci: Pemberdayaan, status kesehatan, lansia

Introduction

The older adult health status is the benchmark for the successful implementation of the National Strategy of 2018-2025, which has been designed by the government (BPS, 2017). Older adult health status is not only determined by biological conditions, but psychological, and social as well (Kemenkes RI, 2018). Improving the welfare of older adults both physically and psychologically can increase their life expectancy, and is influential in the management of older adult health (Koswara, 2015). According to data from BPS, (2017), older adults in Indonesia currently amount to 8.97% or 23.4 million people. The figure is predicted to increase to become 1.4 billion people by 2030. 16.5% of the world's population consists of older adults (Programme, 2017). Based on the results of Susenas (Nation Social-Economic Survey) (BPS, 2017), it shows that the percentage of older adults is more than ten percent in Bali (10.79%), which is in 4th position in terms of the number of older adults in Indonesia. Help Age International (2013) reported that the quality of life for older adults in Indonesia is ranked 74th (International, 2013). This position is lower than those of countries with a higher older adult populations such as Thailand, Vietnam, and Philippines. It is a problem that must be resolved by the government of Indonesia, especially for the older adults who also belong to vulnerable groups.

Older adults are at a high-risk of being exposed to health issues with the morbidity rate of older adults is 26.72% meaning for every 100 older adults there are about 27 sick older adults (Maylasari, Sulistyowati, Ramadani, & Annisa, 2017). Almost half of them have had health complaints in the past month, which is influenced by diseases related to aging factors. Older adult health conditions are often followed by multiple disease problems such as hypertension and other infectious diseases (Anorital, 2016).

Hypertension is included in the top ten world diseases (Gupta & Xavier, 2018). According to WHO (2002), the amount of hypertension sufferers continues to increase globally and it is predicted by the year 2025 that about 29% of adults will suffer from hypertension across the world (Chockalingam *et al.,* 2006). The prevalence of hypertension in Indonesia is based on the results of a 2016 survey where according to national health indicators, hypertensive adults increased to 32.4% of the population (InfoDatin, 2016). Increased hypertension is often followed by an increase in accompanying diseases such as stroke, heart disease and renal failure (Drozdz & Kawecka-Jaszcz, 2014). In addition to causing a high mortality ratio, hypertension also causes an increased state burden through the treatment provided which is covered by National Health Insurance (JKN) (Istiqumah & Rochmah, 2016). The burden is not insignificant considering the older adults need to take the treatment for their entire life

(Dzau & Balatbat, 2019). The increase in hypertension sufferers is due to risk factors prevalent in the community such as smoking habits, salt consumption and low consumption of fruits and vegetables (Unger et al., 2020). Al-wehedy *et al.*, (2014) said that the risk factors for hypertension are the increase in age, female gender, smoking, obesity and hyperlipidaemia. Pharmacological therapy is required to reduce high blood pressure and prevent complications such as cardiovascular and renal morbidity and mortality, in addition to lifestyle modifications (Lemone & Burke, 2008). It is important that the administration of pharmacological therapy is accompanied by a healthy lifestyle in the management of hypertension in older adults (Unger et al., 2020). Research from Park (2011) proves that lifestyle patterns are significantly correlated to systolic and diastolic blood pressure control, which means that the adoption of a good healthy lifestyle is associated with better blood pressure control.

Older adult treatment with hypertension requires compliance in the implementation (Gwadry-Sridhar et al., 2013). Decreased physiological and cognitive functioning causes older adults to have difficulty remembering things and difficulty carrying out hypertensive treatment (Colon, Whitson, Pavon, & Hoening, 2013)(Efendi & Larasati, 2017). Drug consumption, dietary and stress management, and healthy lifestyle improvement need to be included in the family's role, so that older adults with hypertension can achieve optimal health status (Haldar, 2013). Health education is an important intervention strategy for older adults with hypertension to improve compliance and this can be seen as the basis of most of the patient-focused interventions (Busari, 2010). This is in line with research that proves a strong correlation between knowledge and adopting a healthy lifestyle, suggesting that individuals with increased knowledge are more likely to have higher cognitive functioning and can better understand the need for lifestyle changes (Saleem, 2011).

Family empowerment is one way to increase the degree of older adult health (Nurhaida, 2012). Referring to The Law of Indonesian Republic number 13 year 1998 on older adult welfare, article 1 states that older adult empowerment includes improvement on a physical, mental, spiritual and social level as well as increasing knowledge, and skills to ensure that older adults can be empowered (Social, 1998). Community nursing strategies can also be done through empowerment (Melo & Alves, 2019). The empowerment of older adult and family cadres aims to facilitate the older adult care at home and to develop family independence in caring for older adults with health problems (Bierhals et al., 2017).

Cadre and family empowerment can be achieved through a comprehensive care program including a thorough and sustainable method of treatment (Shoghi *et al*., 2019). The

advanced and self-reliant treatment of older adults with chronic illnesses is the key to comprehensive problem management (Nolte & McKee, 2008). Comprehensive care programs for older adults through family empowerment are made dynamic by conducting training activities for cadres and families as well as monitoring the implementation of treatment for the older adult at home (Sarfan *et al.,* 2020). Certainly the training would be facilitated by health workers from the public health centre who oversee the area. Thus, the service facilities to the community provided in the public health centre can be directly received by the family. Therefore, this study will discuss the influence of family empowerment and cadres through comprehensive care against older adult health status with hypertension in Bali province.

Method

The research used the quasi experiment with control group design. This research carried out a pre-post-test involving 62 respondents with 31 respondents each in the intervention and control group. The study was held on a sample of older adults and older adult's families residing in the province of Bali. Comprehensive care interventions were conducted in 2-phases, which are the training and implementation phase. The training phase is done by the responsible nurse for older adults in the public health centre related to family and cadre empowerment in the management of hypertension in older adults for 1 day. Then continued training by the cadres related to mentoring the family and followed by training for families about the management of hypertension in older adults for 1 day. After that, it ends with monitoring and evaluation of the family ability to manage older adult hypertension. The implementation phase was conducted only for the intervention group for 2 months. The family was asked to implement comprehensive care for the older adult at home, based on the training that had been given. To ensure the success of the treatment, the families were facilitated with assistance by cadres twice a week and received assistance by responsible nurses once a week. But before the intervention was given, the intervention and control group had a pre-test measurement of older adult health status conducted using the questionnaire based on a modification of the Short Form Health Survey (SF-12) by Ware, Snow, Kosinki, & Gandek (1971), cited in Sahar (2002), which has been modified in accordance with older adult conditions in Indonesia. The SF-12 consists of 12 items using a Likert 1-5 scale. The SF-12 is calculated using the Physical Component Summary (PCS) and Mental Component Summary (MCS) values using a scale of 1-60. Higher scores indicate that the client's physical and mental health is better. Older adult health status is also measured by measuring blood pressure.

The data was analysed using a dependent and independent t-test to determine the difference in older adult health status after the intervention and a double logistics regression test was used to determine the influence of older adult characteristics on older adult health status. This research has also fulfilled the ethical requirements of research through the approval of the letter No. LB.02.03/EA/KEPK/0298/2020.

Results

Characteristics of the Older Adults

Distribution of older adults related to age and length of hypertension in Bali Province are explained in Table 1.

Table 1. Score of Older Adult Characteristics in Bali Province (n=62)

Variable	Group	N	Mean	Median	SD	Min-Max
Age	Intervention	31	70.13	70	7.728	60-87
	Control	31	67.84	67	5.435	60-80
Length of hypertension	Intervention	31	3.97	3.0	3.535	1-16
	Control	31	7.81	6.0	6.560	1-20

The analysis presented that the average age of the respondents from the intervention and the control group was in the same range. Meanwhile, the average duration of hypertension in the intervention group was 3.97 years and in the control group 7.81 years.

The characteristics of older adults based on gender, marital status and educational status in Bali Province are explained in Table 2.

Table 2. Characteristics of Older Adults in Bali Province (n=62)

	Gender		Marital status			Education	
	Male	Female	Married	Widow/ widower	Not married	<SHS*	≥SHS*
Intervention							
N	15	16	23	8	-	22	9
%	48.4	51.6	72.7	25.8	-	71.0	29.0
Control							
N	6	25	31	-	-	25	6
%	19.4	80.6	100	-	-	80.6	19.4

**SHS = Senior High School*

There were similar dominant characteristics of older adults in both the intervention and control group - most of the respondents were female, their marital status was married, and their educational status was below senior high school.

Differences in Older Adult Status Before and After the Comprehensive Care Intervention based on Family Empowerment and Cadres in the Intervention and Control Group

Comparison of older adult health status data with hypertension before and after the implementation is described in Table 3.

Table 3. Analysis of Differences in Older Adult Health Status with Hypertension before and after the Implementation of Comprehensive Care in Bali Province (n = 62)

Variable	Group	Mean	SD	95% CI	t	p value*
Health Status	Intervention					
	Before	44.91	8.254	-5.198-(-0.222)	-2.224	**0.034**
	After	47.65				
	Difference	2.74	9.611			
	Group					
	Before	40.71	4.060	-0.587-2.136	1.161	0.255
	After	39.94				
	Difference	0.77	3.454			

**dependent t test*

The results of the analysis showed that there was a significant difference in older adult health status in both groups before and after the implementation of family and cadre-based comprehensive care in older adults with hypertension. The intervention group has a difference in health status value of 0.034, while in control group it was 0.255.

Differences in Older Adult Status Before and After the Comprehensive Care Intervention based on Family Empowerment and Cadres in the Intervention and Control Group

The comparison of the health status value in older adults with hypertension after the implementation in the intervention and control group is described in Table 4.

Table 4. Analysis of Differences of Older Adult Health Status with Hypertension after Cmprehensive Care Implementation in Bali Province (N=62)

Variable	Group	N	Mean	SD	95% CI	t	p value*
Health status of older adult	Intervention	31	47.65	9.611	4.041-11.379	4.203	**0.001**
	Control	31	39.94	3.454			

**Independent t test*

The analysis performed showed there was a significant difference in health status between the intervention and control group after implementation with a p value of 0.001.

Selection of Multivariate Variable Candidates

The selection of multivariate variable candidates used the chi-square test. The independent variable that can be used as a multivariate model is the value under 0.250 ($p<0.25$). The results of the selection are shown in Table 5.

Table 5. The Results of Health Status Multivariate Variable Candidates related to Older Adult characteristics in Bali Province

No	Independent variable	Dependent variable (p-value)
	Older adult	Characteristic
1	Age	**0.082**
2	Gender	1.000
3	Marital status	**0.217**
4	Educational status	**0.054**
5	Length of hypertension	1.000

Logistic Regression Model

The result of the bivariate analysis of older adult health status was that age, marital status and older adult education is ≤ 0.250 so it can be categorised into a multivariate model. An eligible variable will be conducted in the logistics regression test to generate a p-value. Variables

with a p-value of > 0.05 will be issued gradually from the largest to the smallest value. The analysis of logistical regression test to the variables influenced the health status is outlined in Table 6.

Table 6. Final Model: Influence of Older Adult Characteristics on Older Adult Health Status in Bali Province (n = 62)

Variable	B	SE	Wald	p-value*	Exp (B)	95%CI
Comprehensive care intervention	-1.674	0.598	7.847	**0.005**	0.188	0.058-0.605
Age	-1.874	0.792	5.597	**0.018**	0.154	0.033-0.725
Constanta	1.136	0.470	5.845	0.016	3.116	

From the results of a multivariate analysis with double logistic regression test, there was a p-value generated for each variable. Variables that have a p-value of > 0.05 will be released gradually, ranging from the largest to the smallest p-value. The results of the analysis shows that only the characteristic variables of older adult (ages) have an effect on older adult health status, while family characteristics variables have no effect on the family ability to treat older adults with hypertension.

Discussion

The average age of the older adult group in the intervention group was 70.13 years, while in the control group it was 67.84 years. According to WHO (1999), older adults aged 70 years or over are included in the older adult group and susceptible to diseases. The result shows older adult respondents who suffer from hypertension are mostly women. Research by (Kusumawaty *et al.*, (2016) stated that there is a relationship between gender and hypertension in older adults. Women are at high risk of hypertension after experiencing the menopause because prior to the menopause, women are protected by oestrogen hormones that play a role in increasing the High Density Lipoprotein (HDL) which prevents the onset of atherosclerosis (Wenger et al., 2018). The majority of older adult respondents were not educated beyond senior high school, according to research by Imaniyah (2016), who reported that the majority of older adults (90%) had low education. The length of suffering from hypertension by older adults in both groups was on average for more than three years. The

longer a person experiences hypertension, the greater the chance of developing heart disease (Novriyanti & Usnizar, 2014).

Family Characteristics

The average age of older adult escorts in the intervention group was 41.90 years old while the length of stay with older adults was 21.81 years. While in the control group, the average age of older adult escorts was 44.81 years old and the length of stay with older adults was 43.26 years. Older adult escorts are predominantly women, married, with an educational status above SHS, working, with an income ≥ standard, from an extended family and the relationship is that the older adult is the parent/in-law of escort.

Escort education affects the quality of treatment of older adults with hypertension (Narayani P & Kartinah, 2009). Researchers argue that older adult family education affects the outcome of mentoring for older adults with hypertension. One concern about empowerment is whether the family is able to implement the education delivered, but a higher educational status (such as above ≥SHS), can facilitate the family to receive as well as improve their knowledge (Budiman & Riyanto, 2013).

The results of the study indicate that the family status of older adults with hypertension is dominated by working status. Researchers assume that families with working status can increase their commitment and family responsibilities in caring for the older adult. This statement is supported by Johari & Hee (2013), who suggested that workers who have regular employment are more likely to exhibit behaviours that are more oriented towards the patient's interests than those who do not have such employment (Johari & Hee, 2013). It therefore can be interpreted that education and occupational status have an important role in the family success as a hypertensive older adult's companion.

The results showed that most-older adults with hypertension live in extended family with the older adult’s escort was dominated with woman.

Culturally, this condition is quite particular to family in Bali who has a patrilineal family system (father's lineage) (Sujana, 2017). Living in an extended family allows for a lot of family member involvement in caring for the older adult at home (Lao *et al.,* 2019). The role of women in the family closely related to the function of family management and maintaining family’s health. Research from Kharisna *et al.,* (2018), prove that women have a better self-care agency than man, because they can be more active and concern to take care of their health and their family’s health as well.

Older adult health status is not only measured by their physical condition (WHO, 2015). Various declines that become signs of aging in the older adult seldom result in the older adult having a negative self-concept which then causes depression (Cahoon, 2010). Depression became a trigger factor for hypertension in older adults (Shah *et al.*, 2013). Involving the older adult in daily conversation can enhance their self-confidence and divert their minds away from depression (Lao *et al.,* 2019). Therefore the mentoring from family members helps the older adult to have a more prosperous older life especially for older adults with hypertension (Damayanti, 2018).

Older Adult Health Status Before and After the Comprehensive Care Intervention

The average value of older adult health status in the intervention group before training was higher than the average rate of the control group. In the measurement after training was given, the average value of older adult health status of the intervention group increased, while the older adult health status of the control group experienced a slight decline. Increase in the value of older adult health status before and after training in the group intervention was 2.74, a decrease in health status value of the control group was 0.77. The difference in the value of older adult health status of the intervention group and control group as the influence of model intervention through the mentoring conducted for cadres and families in the management of older adult hypertension at home. The existence of family in terms of older adult's treatment also provided a good influence of older adult's quality of life (Maryam *et al.*, 2018).

Statistical test results showed there was a difference in older adult health status before and after model intervention with the value $p < 0.05$. The improvement of average of older adult health status after intervention is supported by increasing the family's ability to conduct mentoring for the older adult with hypertension.

This statement is supported by research from (Chen, 2013), that showed that teachers given training by public health centre nurses about the School Health Unit are more confident and have greater feelings of responsibility to develop health promotion in students. This illustrates the importance of older adult cadres and family in conducting mentoring of older adults to improve their health status.

The slight improvement of the average in older adult health status was caused by the evaluation process which was held two months after the implementation. Based on theory, the change will occur at least three months after the intervention. The health status prescribed eight questions, which ranged from physical functioning to older adult mental health, and it requires a sufficient time to realize the optimal health status. This is related to research from

(Croker & Russel, 2012), where a significant change took place six months after the intervention, such as decreased IMT, changes in dietary behaviour and lifestyle changes. This fact explained that the length of time for model intervention affects the change in older adult health status (Putri *et al.*, 2015).

The existence of cadres and families as older adult social support is indispensable for mentoring older adults with hypertension. Cadre and family training does not directly increase the health status of older adults, but there is a connection between the family's ability to manage the hypertension in older adults at home and older adult health status (Baroroh, 2012). The need for support, related to the research results of Umayana (2015), was that the support from community leaders and cadres is indispensable to the activities to improve the information about health.

Families and older adult cadres are expected to bridge the gap between health workers and older adults with hypertension. The role of cadres is indispensable in conducting mentoring for the family in managing hypertension in the older adult at home to ensure increased status of older adult health and family independence in the conduct of family tasks.

Influence of Older Adult Characteristics on Older Adult Health Status

The multivariate test results obtained an age influence on the status of older adult health. Age is a confounding variable that affects the status of older adult health, in addition to the influence of model intervention. An older adult age group of interventions was higher than the control group. Researchers argue that the age of the older adult can affect their attitude towards their own health and therefore it can affect their health status. This is supported by the research of Nygårdh *et al.*, (2011) which stated that the greater the respondent's maturity, the more adaptable they will be in practice. The older adult can adapt to the conditions and care that families are given. Acceptance of the treatment, such as following the family's direction in carrying out hypertension management is a key to the success of the control of blood pressure in older adults (Efendi & Larasati, 2017).

Conclusion

Family and cadre empowerment are proven to have a significant influence on older adult health status with hypertension in Bali Province. There was an increase in health status in the intervention group before and after the implementation. In addition to the influence of comprehensive care interventions based on empowering cadres and families, health status

also increased due to the influencing factor of age in older adults. Thus, the intervention of comprehensive care and the age of the older adults can affect their health status.

Recommendations

In order to provide a prosperous life for older adults, comprehensive care interventions based on empowering cadres and families are expected to be implemented as one of the programs of the public health centre and carried out routinely especially for empowering cadres. In addition, it is necessary to develop the comprehensive care interventions based on the empowering cadres and families program to optimize the evaluation process of respondents.

Acknowledgments

The researcher would like to thank the Nursing Department, Health Polytechnic of Ministry of Health Denpasar and Jendral Seodirman University for the support on this occasion.

References

Al-wehedy, A., Hassan, S., Elhameed, A., & El-hameed, D. A. (2014). Effect of Lifestyle Intervention Program on Controlling Hypertension among Older Adults. *Journal of Education and Practice*, *5*(5), 61–71.

Anorital, A. (2016). Morbiditas dan Multi Morbiditas Pada Kelompok Lanjut Usia di Indonesia. *Jurnal Biotek Medisiana Indonesia*, *4*(2), 77–88. https://doi.org/10.22435/jbmi.v4i2.5124.77-88

Baroroh, D. B. & N. I. (2012). Peran Keluarga Sebagai Care Giver Terhadap Pengelolaan Aktifitas Pada Lansia Dengan Pendekatan NIC (Nursing Intervention Classification) Dan NOC (Nursing Outcome Classification). *Jurnal Keperawatan*, *3*(2), 141–151.

Bierhals, C. C. B. K., Dos Santos, N. O., Fengler, F. L., Raubustt, K. D., Forbes, D. A., & Paskulin, L. M. G. (2017). Needs of family caregivers in home care for older adults. *Revista Latino-Americana de Enfermagem*, *25*. https://doi.org/10.1590/1518-8345.1511.2870.

BPS. (2017). *Statistik Kesejahteraan Rakyat*. Jakarta: Badan Pusat Statistik.

Budiman, & Riyanto, A. (2013). *Kapita Selekta Kuisioner Pengetahuan dan Sikap Dalam Penelitian Kesehatan*. Jakarta: Kapita Selekta.

Busari. (2010). Impact of Patients' Knowledge, Attitude and Practices on Hypertension on Compliance with Antihypertensive Drugs in a Resource-poor Setting. *TAF Preventive Medicine Bull*, *9*(2), 87–92.

Cahoon, C. G. (2010). Depression in older adults. *American Journal of Nursing*, *112*(11), 22–30. https://doi.org/10.1097/01.NAJ.0000422251.65212.4b.

Chen, S. (2013). Nutrition knowledge, attitude and practice of teachers in rehabilitation centres in Northern Malaysia. *Mal J Nurt*, *18*(2), 185–205.

Chockalingam, A., Campbell, N. R., & Fodor, J. G. (2006). Worldwide epidemic of hypertension. *Canadian Journal of Cardiology*, *22*(7), 553–555. https://doi.org/10.1016/S0828-282X(06)70275-6.

Colon, C., Whitson, H. E., Pavon, J., & Hoening, H. (2013). Functional Decline in Older Adults. *Am Fam Physician*, *15*(88), 388–394. https://doi.org/10.1097/01.NAJ.0000277831.12796.84.

Croker, H., & Russel, M. (2012). Family based behavioral treatment of chilhood obesity in a UK National Health Service setting : randomised controlled trial. *International Journal of Obesity*.

Damayanti, S. (2018). *Hubungan dukungan keluarga dengan kualitas hidup lansia penderita hipertensi di dusun grujugan bantul yogyakarta*. Universitas 'Aisyiyah Yogyakarta.

Drozdz, D., & Kawecka-Jaszcz, K. (2014). Cardiovascular changes during chronic hypertensive states. *Pediatric Nephrology (Berlin, Germany)*, *29*(9), 1507–1516. https://doi.org/10.1007/s00467-013-2614-5.

Dzau, V. J., & Balatbat, C. A. (2019). Future of hypertension: The need for transformation. *Hypertension*, *74*(3), 450–457. https://doi.org/10.1161/HYPERTENSIONAHA.119.13437.

Efendi, H., & Larasati, T. A. (2017). Dukungan Keluarga dalamManajemen Penyakit Hipertensi Family Support in Hypertension Disease ' s Management. *Majority*, *6*, 34–40.

Gupta, R., & Xavier, D. (2018). Hypertension: The most important non communicable disease risk factor in India. *Indian Heart Journal*, *70*(4), 565–572. https://doi.org/10.1016/j.ihj.2018.02.003.

Gwadry-Sridhar, F. H., Manias, E., Lal, L., Salas, M., Hughes, D. A., Ratzki-Leewing, A., & Grubisic, M. (2013). Impact of interventions on medication adherence and blood pressure control in patients with essential hypertension: A systematic review by the ISPOR medication adherence and persistence special interest group. *Value in Health*, *16*(5), 863–871. https://doi.org/10.1016/j.jval.2013.03.1631.

Haldar, R. N. (2013). Global Brief on Hypertension: Silent Killer, Global Public Health Crisis. *Indian Journal of Physical Medicine and Rehabilitation*, *24*(1), 2–2. https://doi.org/10.5005/ijopmr-24-1-2.

Imaniyah, N. (2016). Gambaran Karakteristik Demografi dan Tingkat Kognitif Lansia di Balai Pelayanan Sosial Bisma Upakara Pemalang. *Pekalongan*.

InfoDatin. (2016). SITUASI LANJUT USIA (LANSIA) di Indonesia. In *Kementerian Kesehatan RI*. Indonesia.

International, H. A. (2013). Global Age Watch Index 2013 Insight report. In *Help Age*

Internatinal Global Network. Retrieved from www.globalagewatch.org.

Istiqumah, A. N., & Rochmah, T. N. (2016). BEBAN EKONOMI PADA PENDERITA HIPERTENSI DENGAN STATUS PBI JKN DI KABUPATEN PAMEKASAN Ashri. *Jurnal Universitas Airlangga*, *2*(2), 1124–1132.

Johari, H., & Hee, O. C. (2013). Personality Traits and Customer-Oriented Behavior in the Health Tourism Hospitals in Malaysia. *International Journal of Trade, Economics and Finance*, *4*(January 2013), 213–216. https://doi.org/10.7763/ijtef.2013.v4.288.

Kemenkes RI. (2018). *Pedoman untuk Puskesmas dalam Perawatan Jangka Panjang bagi Lanjut Usia*. https://doi.org/351.077.

Kharisna, D., Ropi, H., & Rahayu, U. (2018). The Factors that are Related to Self-Care Agency in Patients with Hypertension. *Jurnal Keperawatan Padjadjaran*, *6*(1), 1–17. https://doi.org/10.24198/jkp.v6i1.301.

Koswara. (2015). Psikologi Usia.

Kusumawaty, J., Hidayat, N., & Ginanjar, E. (2016). Hubungan Jenis Kelamin dengan Intensitas Hipertensi pada Lansia di Wilayah Kerja Puskesmas Lakbok Kabupaten Ciamis. *Mutiara Medika*, *16*(2), 46–51.

Lao, S. S. W., Low, L. P. Le, & Wong, K. K. Y. (2019). Older residents' perceptions of family involvement in residential care. *International Journal of Qualitative Studies on Health and Well-Being*, *14*(1). https://doi.org/10.1080/17482631.2019.1611298.

Lemone, P., & Burke, K. (2008). *Medical- Surgical Nursing: Critical thinking in client care* (4th ed.). New Jersey: Pearson Prentice Hall Company.

Maryam, R. S., Resnayati, Y., Riasmini, N. M., & Mambang Sari, C. W. (2018). Effect of Family Support Intervention towards Quality of Life with Elderly's Hypertension in Community. *Jurnal Keperawatan Padjadjaran*, *6*(3), 281–288. https://doi.org/10.24198/jkp.v6i3.670.

Maylasari, I., Sulistyowati, R., Ramadani, K. D., & Annisa, L. (2017). *Statistik Penduduk Lanjut usia 2017* (D. Susilo, I. E. Harahap, & R. Sinang, Eds.). Jakarta: Badan Pusat Statistik.

Melo, P., & Alves, O. (2019). Community Empowerment and Community Partnerships in Nursing Decision-Making. *Healthcare*, *7*(2), 76. https://doi.org/10.3390/healthcare7020076.

Narayani P, I., & Kartinah. (2009). Hubungan Tingkat Pengetahuan Keluarga Terhadap Sikap Keluarga Dalam Pemberian Perawatan Activities Daily Living (ADL) Pada Lansia Di Rumah Di Desa Tanjungrejo Margoyoso Pati. *Berita Ilmu Keperawatan*, *2*(2), 81–86.

Nolte, E., & McKee, M. (2008). *Caring for people with chronic conditions : A Health System Perspective* (J. Fugueras, M. McKee, E. Mossialos, & S. R. B, Eds.). New York: Open University Press.

Novriyanti, I. D., & Usnizar, F. (2014). *Pengaruh Lama Hipertensi Terhadap Penyakit Jantung Koroner di Poliklinik Kardiologi RSUP . Dr . Mohammad Hoesin Palembang 2012*. *1*(1), 55–60.

Nurhaida. (2012). *PENGARUH PERAN KELUARGA DAN KADER LANSIA TERHADAP PEMANFAATAN PELAYANAN POSYANDU LANSIA DI WILAYAH KERJA PUSKESMAS BANDAR KHALIPAH KECAMATAN PERCUT SEI TUAN*. Universitas Sumatera Utara.

Nygårdh, A., Wikby, K., Malm, D., & Ahlstrom, G. (2011). Empowerment in outpatient care for patients with chronic kidney disease - from the family member ' s perspective. *BMC Nursing*, *10*(1), 21. https://doi.org/10.1186/1472-6955-10-21.

Park. (2011). The Effects of an Integrated Health Education and Exercise Program in Community-Dwelling Older Adults with Hypertension : A Randomized Controlled Trial. *Education and Counseling*, *82*(2), 133–137.

Programme, U. N. D. (2017). Ageing, Older Persons, and The 2030 Agenda for Sustainable Development. Retrieved June 24, 2020, from http://www.undp.org.

Putri, S. T., Fitriana, L. A., & Ningrum, A. (2015). Studi Komparatif : Kualitas Hidup Lansia Yang Tinggal Bersama Keluarga Dan Panti. *Jurnal Pendidikan Keperawatan Indonesia*, *1*(1), 1. https://doi.org/10.17509/jpki.v1i1.1178.

Sahar, J. (2002). *Supporting family carers in caring for older people in the community in Indonesia*. Queensland University of Technology.

Saleem. (2011). Association between Knowledge and Drug Adherence in Patients with Hypertension in Quetta, Pakistan. *Tropical Journal of Pharmaceutical Research*.

Sarfan, M., Hafel, M., & Kian, L. (2020). Implementation of the Family Welfare Empowerment Program in the Health Sector in the Sula Islands District , Indonesia. *International Journal of Arts and Social Science*, *3*(3), 108–116.

Shah, M. T., Zonderman, A. B., & Waldstein, S. R. (2013). Sex and age differences in the relation of depressive symptoms with blood pressure. *American Journal of Hypertension*, *26*(12), 1413–1420. https://doi.org/10.1093/ajh/hpt135.

Shoghi, M., Shahbazi, B., & Seyedfatemi, N. (2019). The effect of the Family-Centered Empowerment Model (FCEM) on the care burden of the parents of children diagnosed with cancer. *Asian Pacific Journal of Cancer Prevention*, *20*(6), 1757–1764. https://doi.org/10.31557/APJCP.2019.20.6.1757.

Social. UNDANG-UNDANG REPUBLIK INDONESIA NOMOR 13 TAHUN 1998. , 43 Himpunan Peraturan Perundang-undangan Republik Indonesia Tahun 1998 § (1998).

Sujana, I. P. W. M. (2017). Pelaksanaan Perkawinan Nyentana Dalam Rangka Mengajegkan Sistem Kekeluargaan Patrilineal di Bali. *Widya Accarya*, *7*(1), 1–8. Retrieved from file:///C:/Users/User/Downloads/436-Article Text-818-1-10-20171027 (1).pdf.

Umayana. (2015). Dukungan Keluarga dan Tokoh Masyarakat terhadap Keaktifan ke Posbindu PTM. *Jurnal Kesehatan Masyarakat*. https://doi.org/1858-1196.

Unger, T., Borghi, C., Charchar, F., Khan, N. A., Poulter, N. R., Prabhakaran, D., … Schutte, A. E. (2020). *Clinical Practice Guidelines 2020 International Society of Hypertension Global Hypertension Practice Guidelines International Society of Hypertension*. 1334–1357. https://doi.org/10.1161/HYPERTENSIONAHA.120.15026.

Wenger, N. K., Arnold, A., Bairey Merz, C. N., Cooper-DeHoff, R. M., Ferdinand, K. C., Fleg, J. L., … Pepine, C. J. (2018). Hypertension Across a Woman's Life Cycle. *Journal of the American College of Cardiology*, *71*(16), 1797–1813. https://doi.org/10.1016/j.jacc.2018.02.033.

WHO. (1999). Men Ageing and Health. In *Journal of the Indian Medical Association*. Geneva.

WHO. (2002). The World Health Report 2002 - Reducing Risks, Promoting Healthy Life. In *World Health Organisation*. Geneva.

WHO. (2015). *World Report on Ageing and Health*. Geneva.