JHNS
Journal of Holistic Nursing Science
E-ISSN: 2579-7751 P-ISSN: 2579-8472
Journal of Holistic Nursing Science

Article journey:
Submitted
30/5/2022
Revised
4/6/2022
Accepted
20/11/2022
Online first
20/11/2022

ORIGINAL RESEARCH

Determinant of self-management in chronic non-communicable disease among elderly

Akbar Harisa[1], Andi Fadillah Arfan[1], Wafiq Aulia Ramadhani[1], M. Nabil Sakti Pahruddin[1]
Yodang Yodang[2,3]

Author information
[1]Department of Nursing, Universitas Hasanuddin, Indonesia
[2]Department of Nursing, Universitas Sembilanbelas November Kolaka, Indonesia
[3]Department of Nursing, Politeknik Kesehatan Kemenkes Yogyakarta, Indonesia

yodang.usnkolaka@gmail.com

https://doi.org/10.31603/nursing.v9i2.7081

Abstract
Chronic non-communicable diseases have become a health concern in the health care system worldwide, especially in older people. Managing the disease was crucial to improving the quality of life among those older people. This study aims to identify self-management among older people with chronic non-communicable diseases. A cross-sectional study method was conducted in two primary healthcare centers. The respondents were recruited using accidental sampling, and 40 older people participated. The socio-demographics, lifestyle, and self-management were extracted by using paper-based questionnaires. All socio-demographic and lifestyle data statistically show no significant impact on the self-management of chronic non-communicable diseases among older people. Predominantly participants were old-old category (55%), women (62.5), the middle level of education (50%), household (42.5%), married (67.5%), consuming salted fish (80%), salted egg (50%). Since the study result is statistically insignificant, the large sample size may be needed to increase the study result.

Keywords: Non-communicable disease; community nursing; elderly care; quality of life; self-management

Introduction

Chronic non-communicable diseases (NCDs), such as heart disease, stroke, cancer, chronic respiratory diseases, and diabetes (Mwangi, Kulane & Van Hoi, 2015), are the leading causes of morbidity and mortality in most low- and middle-income countries (LMIC). The CNCDs has been recognized as the primary disease endangering human health and have become the heaviest burden to the healthcare system worldwide (Wu et al., 2015). The CNCDs are diseases with long duration and generally slow progression; these also are responsible for increased co-morbidities and decreased quality of life among older people (Zhang, Liu & Ni, 2019). The World Health Organization reports that nearly 80%, accounting for 41 million NCD deaths, occur in the LMIC and about 75% of global CNCD-related deaths occur after age 60 (Amu et al., 2021). The prevalence has increased in older population. Therefore, that will lead to an increased number of people who will develop high-burden chronic diseases, including highly prevalent and associated with premature death and increased healthcare utilization (Kastner et al., 2018).

The population of older people is increasing globally and is estimated to increase to over 1.5 billion by 2050 (Yadav et al., 2021). A similar demographic transition is occurring in Indonesia, in which older Indonesians are geographically spread throughout the country with various numbers in each region and 9.05% of the total population in South Sulawesi Province (Kadar, Francis & Sellick, 2013). According to the Statistics Central Board of Indonesia (BPS), older people living with chronic diseases were significantly high. In 2011, nearly 30% of older people 60-69 years of age reported a health issue/problem related to chronic diseases (Bestari & Wati, 2016). According to Basic Health Research in 2018, the national prevalence of four major NCDs among the older population was various such as cancer (11.98% per mil), DM (16.54% per mil), CVD (13.2%), and hypertension (55.23-69.53%) (Riskesdas, 2019a). During the Basic Health Research report for South Sulawesi Province, the prevalence of the NCDs in Makassar was Cancer at 1.73%, DM at 12.96%, and hypertension at 56.32% (Riskesdas, 2019b).

The burden of chronic disease is a global phenomenon, with more than half of older adults living with multi-morbidity. It was associated with poor quality of life (Kim & Youn, 2015). In order to improve the quality of life and prevent complications and the risks of dependency among older people living with chronic disease, some studies suggested the importance of self-care. They necessitate adequate knowledge and the ability to manage their chronic disease. A study on the chronic disease self-management program reported that the program positively impacts the enhancement of quality of life and health status in chronic disease patients (Kim & Youn, 2015). Further, the scholars found some challenges in self-management improvement, including patient cultural characteristics. Thus, self-management influences self-care adherence and health status among older people with chronic non-communicable diseases. The self-management comprises health education related to disease, physical activity, alcohol consumption reduction, smoking cessation, dietary management, and blood pressure monitoring (Putri, Rekawati & Wati, 2021). It is crucial to foster patient engagement and persistence in managing chronic illness to achieve desired clinical goals (Hessler et al., 2019). Since self-management benefits older people living with chronic non-communicable diseases to improve their health-related quality of life. It was crucial to investigate self-management and its determinant among older people with chronic non-communicable diseases. The study's findings are expected to help community nurses improve self-management assessment in patients with non-communicable diseases.

Method

This study applied the cross-sectional method due to the research objective consideration. Participants recruited in this study are those older people living in Makassar, particularly in the area under the Primary Health Care (PHC) authority of Tamalanrea Jaya and Antang. Both PHCs were the most populous region in Makassar, especially for older people. Criteria inclusion were older people living with chronic diseases such as hypertension or diabetes mellitus (both diseases placed in the top rank of most frequent diseases in these regions). The participants were selected using purposive sampling methods. This study was conducted from June to early September 2021, and the target participants were at least 40 people.

Data collection used the questionnaire. The questionnaire consists of three parts, socio-demographics, and self-management. The socio-demographics variable included age and group of age, gender, educational level, occupation, and marital status (Yodang et al., 2021). Risk behaviors included smoking history, alcohol consumption, salted fish, and egg-salted consumption (Qu et al., 2019). At the same time, self-management includes self-monitoring, obedience, self-regulation, and self-integration. Both instruments were already translated in Bahasa and validated in Indonesian (Yodang et al., 2021; Putri, Rekawati & Wati, 2021).

The ethical commission approved this study for Health Research of the Faculty of Medicine, Universitas Hasanuddin, under registration number 3636/UN4.14.1/TP.01.02/2021. The ethics committee approved the study protocol and procedure before conducting the research. All collected data were anonymous. All researchers in this study followed the health protocol for COVID-19 and Community Activities Restrictions Program (Pemberlakuan Pembatasan Kegiatan Masyarakat-PPKM) (Yodang, Harisa & Syahrul, 2021). Data analysis used the SPSS software, focusing on univariate tests for sociodemographics, behavioral risks, and self-management. The data shows in frequency and percentage, while the bivariate test for crossing tab between two variables (the sociodemographic and behavioral risks) and self-management.

Results

The study result will explain in some sections, which are the participants' socio-demographics, measurements of participants' characteristics, and self-management of older people living with chronic non-communicable diseases. Forty older people participated in this study, in which the majority of them whom old older (55%), female (62.5%), had an educational level of high school (50%), household (42.5%), married (67.5%), have no smoking history (82.5%), salted fish consumption (80%), equal in have/have not egg salted consumption, and adequate in self-management (85%) **(Table 1)**.

Table 1. Socio-demographics and behavioral risks of respondent

Characteristics	Frequency (n=40)	Percentage
Group of age		
Early older	3	7.5
Late older	15	37.5
Old older	22	55
Gender		
Male	15	37.5
Female	25	62.5
Educational level		
Basics	6	15
Intermediate (high school)	20	50
Higher (university)	14	35
Occupation		
Pension	14	35
Household	17	42.5
Self-employee	3	7.5
Educators	3	7.5
Civil servant	1	2.5
Unemployed	2	5
Marital status		
Married	27	67.5
Divorce	13	32.5
Smoking history		
Yes	7	17.5
No	33	82.5
Alcohol consumption		
Yes	2	5
No	38	95
Salted fish consumption		
Yes	32	80
No	8	20
Egg salted consumption		
Yes	20	50
No	20	50
Self-monitoring		
Lack	22	55
Adequate	18	45
Obedience		
Lack	5	12.5
Adequate	35	87.5
Self-regulation		
Lack	23	57.5
Adequate	17	42.5
Self-integration		
Lack	6	15
Adequate	34	85
Self-management		
Lack	6	15
Adequate	34	85

Based on the statistical analysis, this study found that none of the characteristics affect self-management among older people who live with the chronic non-communicable disease (p>0.05) **(Table 2)**.

Table 2. Socio-demographics and self-management

Characteristics	Self-management		*p*
	Lack	Adequate	
Group of age			
Early older	0	3 (7.5)	0.692
Late older	2 (5)	13 (32.5)	
Old older	4 (10)	18 (45)	
Gender			
Male	3 (7.5)	12 (30)	0.400
Female	3 (7.5)	22 (55)	
Educational level			
Basics	2 (5)	4 (10)	0.372
Intermediate (high school)	2 (5)	18 (45)	
Higher (university)	2 (5)	12 (30)	
Occupation			
Pension	2 (5)	12 (30)	0.661
Household	3 (7.5)	14 (35)	
Self-employee	0	3 (7.5)	
Educators	0	3 (7.5)	
Civil servant	0	1 (2.5)	
Unemployed	1 (2.5)	1 (2.5)	
Marital status			
Married	3 (7.5)	24 (60)	0.487
Divorce	3 (7.5)	10 (25)	
Smoking history			
Yes	1 (2.5)	6 (15)	0.721
No	5 (12.5)	28 (70)	
Alcohol consumption			
Yes	0	2 (5)	0.719
No	6 (15)	32 (80)	
Salted fish consumption			
Yes	4 (10)	28 (70)	0.344
No	2 (5)	6 (15)	
Egg salted consumption			
Yes	3 (7.5)	17 (42.5)	0.669
No	3 (7.5)	17 (42.5)	

Based on the statistical analysis, the study found that all sub-scales of self-management affect the whole self-management ability among older people living with a chronic non-communicable disease. The sub-scales include self-monitoring (p<0.05), obedience (p<0.05), self-regulation (p<0.05), and self-integration (p<0.05) **(Table 3)**.

Discussion

This study was the first to explore the socio-demographics and behavioral risks of self-management among older people living with a chronic non-communicable disease. Investigation in this study expanded the characteristics among the participants, such as educational level, occupational, and marital status. While behavioral risks such as smoking history, alcohol consumption, salted fish consumption, and egg salted consumption were also investigated. Personal information is always available, personal information is displayed publicly and permanently, and feedback from colleagues can be measured instantly in the form of "likes" (Nesi, 2020).

Table 3. Sub-scales and self-management

Subscales	Self-management		*p*
	Lack	Adequate	
Self-monitoring			
Lack	6 (15)	16 (40)	0.019
Adequate	0	18 (45)	
Obedience			
Lack	4 (10)	1 (2.5)	0.001
Adequate	2 (5)	33 (82.5)	
Self-regulation			
Lack	6 (15)	17 (42.5)	0.026
Adequate	0	17 (42.5)	
Self-integration			
Lack	4 (10)	2 (5)	0.002
Adequate	2 (5)	32 (80)	

The result of this study provides insight into the context of socio-demographic characteristics, behavioral risks, and sub-scales of self-management that impact the whole self-management among older people living with a chronic non-communicable disease (Qu et al., 2019). Even the previous study reported that self-management behavior changed with disease-related and individual factors, such as disease, age, ethnicity, and psychological characteristics (Kong, Zuo & Chen, 2021). However, this study points out that all socio-demographic characteristics do not impact self-management among the participants. The sample size may affect the study since only 40 older people were involved in this study. A China-clustered randomized control trial study examines the association between health literacy and self-management (Wang et al., 2017). The study found that health literacy was positively associated with self-management. Based on the equation model, the study reported that the higher the educational level, the higher their self-management and health-related quality of life.

In contrast, this study found that educational level impacts self-management, which is statistically insignificant. Regarding behavioral risk, we point out that most participants reported no smoking or alcohol consumption; however, statistically, the result did not impact self-management. Moreover, eating habits related to behavioral risks, such as salted fish and egg-salted consumption, were still high among the participants. This could be affected by the participants' culture. However, cultural and ethnicity-related issues were uninvestigated in this study. Further, self-monitoring such as was influenced by self-management itself (Gu et al., 2014), and the study result was consistent with this study, in which self-monitoring has a significant impact on self-management.

The Swedish scholars investigated self-management among hypertension patients and found that patient's ability to perform self-management is affected by their daily life experiences (Hallberg, Ranerup & Kjellgren, 2016). In another study conducted in the US, the researchers found that participants who were older and had severe diseases had good self-management. Further, researchers identified that participants were under 65 years old and less aware since they still had regular work and responsibilities to their families (Eck et al., 2020). In contrast, a community-based study in China reported that the participation among older people visiting healthcare facilities was only 8.9%, due to their worries about complications (Gu et al., 2014). This study offers new insight into how the self-monitoring, obedience, self-regulation, and self-integration domains were completely correlated to self-management among older people. Due to the COVID-19 outbreaks, visiting older people to PHCs was declined, affecting the sample size at the end of this study.

Conclusion

Self-management was crucial, particularly among older people with chronic non-communicable diseases. This study found that the socio-demographic characteristics and behavioral risks show no impact on self-management, while the sub scales of self-management significantly impact the whole of self-management. To improve the evidence of this study's findings, extensive recruitment of participants is needed. Besides that, some variables and characteristics must be involved in the study.

Author's declaration
The authors made substantial contributions to the conception and design of the study and took responsibility for data analysis, interpretation, and discussion of results. For manuscript preparation, all the authors read and approved the final version of the paper.

Funding
The study received funding from the Center of Research and Community Empowerment (LPPM) Universitas Hasanuddin, Indonesia.

Availability of data and materials
All data are available from the authors.

Competing interests
The authors declare no competing interest.

Acknowledgments
The authors thank the Center of Research and Community Empowerment (LPPM) Universitas Hasanuddin, Indonesia.

References
Amu, H., Darteh, E. K. M., Tarkang, E. E., & Kumi-Kyereme, A. (2021). Management of chronic non-communicable diseases in Ghana: a qualitative study using the chronic care model. BMC public health, 21(1), 1-18. https://doi.org/10.1186/s12889-021-11170-4

Bestari, B. K., & Wati, D. N. K. (2016). Penyakit Kronis Lebih dari Satu Menimbulkan Peningkatan Perasaan Cemas pada Lansia Di Kecamatan Cibinong. Jurnal Keperawatan Indonesia, 19(1), 49-54. http://www.jki.ui.ac.id/index.php/jki/article/viewFile/433/546

Eck, C., Biola, H., Bulgin, D., Whitney, C. A., Bakovic, M., Hayes, T. M., ... & Granger, B. B. (2020). Efficacy of Hypertension Self-management Classes Among Low-Income Patients of a Federally Qualified Health Center. Circulation, 142(Suppl_3), A15858-A15858. https://www.ahajournals.org/doi/abs/10.1161/circ.142.suppl_3.15858

Gu, J., Zhang, X. J., Wang, T. H., Zhang, Y., & Chen, Q. (2014). Hypertension knowledge, awareness, and self-management behaviors affect hypertension control: a community-based study in Xuhui District, Shanghai, China. Cardiology, 127(2), 96-104. https://doi.org/10.1159/000355576

Hallberg, I., Ranerup, A., & Kjellgren, K. (2016). Supporting the self-management of hypertension: Patients' experiences of using a mobile phone-based system. Journal of human hypertension, 30(2), 141-146. https://doi.org/10.1038/jhh.2015.37

Hessler, D. M., Fisher, L., Bowyer, V., Dickinson, L. M., Jortberg, B. T., Kwan, B., ... & Dickinson, W. P. (2019). Self-management support for chronic disease in primary care: frequency of patient self-management problems and patient reported priorities, and alignment with ultimate behavior goal selection. BMC family practice, 20(1), 1-10. https://doi.org/10.1186/s12875-019-1012-x

Kadar, K. S., Francis, K., & Sellick, K. (2013). Ageing in Indonesia–health status and challenges for the future. Ageing International, 38(4), 261-270. https://doi.org/10.1007/s12126-012-9159-y

Kastner, M., Cardoso, R., Lai, Y., Treister, V., Hamid, J. S., Hayden, L., ... & Straus, S. E. (2018). Effectiveness of interventions for managing multiple high-burden chronic diseases in older adults: a systematic review and meta-analysis. CMAJ, 190(34), E1004-E1012. https://www.cmaj.ca/content/cmaj/190/34/E1004.full.pdf

Kemenkes. (2019a). Laporan Nasional Riskesdas 2018/Badan Penelitian dan Pengembangan Kesehatan. Jakarta : Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.

Kemenkes. (2019b). Laporan Provinsi Sulawesi Selatan Riskesdas 2018/Badan Penelitian dan Pengembangan Kesehatan. Jakarta : Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.

Kim, S. H., & Youn, C. H. (2015). Efficacy of chronic disease self-management program in older Korean adults with low and high health literacy. Asian nursing research, 9(1), 42-46. https://doi.org/10.1016/j.anr.2014.10.008

Kong, D., Zuo, M., & Chen, M. (2021). Self-management behaviours of older adults with chronic diseases: comparative analysis based on the daily activity abilities. Australian Journal of Primary Health, 27(3), 186-193. https://doi.org/10.1071/PY20159

Mwangi, J., Kulane, A., & Van Hoi, L. (2015). Chronic diseases among the elderly in a rural Vietnam: prevalence, associated socio-demographic factors and healthcare expenditures. International Journal for Equity in Health, 14(1), 1-8. https://doi.org/10.1186/s12939-015-0266-8

Ng, R., Sutradhar, R., Wodchis, W. P., & Rosella, L. C. (2018). Chronic Disease Population Risk Tool (CDPoRT): a study protocol for a prediction model that assesses population-based chronic disease incidence. Diagnostic and prognostic research, 2(1), 1-11. https://doi.org/10.1186/s41512-018-0042-5

Putri, S. E., Rekawati, E., & Wati, D. N. K. (2021). Effectiveness of self-management on adherence to self-care and on health status among elderly people with hypertension. Journal of Public Health Research, 10(s1). https://jphres.org/index.php/jphres/article/view/2406

Qu, Z., Parry, M., Liu, F., Wen, X., Li, J., Zhang, Y., ... & Li, X. (2019). Self-management and blood pressure control in China: a community-based multicentre cross-sectional study. BMJ open, 9(3), e025819. https://doi.org/10.1186/s12875-019-1012-x

Wang, C., Lang, J., Xuan, L., Li, X., & Zhang, L. (2017). The effect of health literacy and self-management efficacy on the health-related quality of life of hypertensive patients in a western rural area of China: a cross-sectional study. International Journal for Equity in Health, 16(1), 1-11. https://doi.org/10.1186/s12939-017-0551-9

Wu, F., Guo, Y., Chatterji, S., Zheng, Y., Naidoo, N., Jiang, Y., ... & Kowal, P. (2015). Common risk factors for chronic non-communicable diseases among older adults in China, Ghana, Mexico, India, Russia and South Africa: the study on global AGEing and adult health (SAGE) wave 1. BMC public health, 15(1), 1-13. https://doi.org/10.1186/s12889-015-1407-0

Yadav, U. N., Ghimire, S., Mistry, S. K., Shanmuganathan, S., Rawal, L. B., & Harris, M. (2021). Prevalence of non-communicable chronic conditions, multi-morbidity and its correlates among older adults in rural Nepal: a cross-sectional study. BMJ open, 11(2), e041728. http://dx.doi.org/10.1136/bmjopen-2020-041728

Yodang, Y., Kiik, S. M., Fauji, A., Hamka, H., Pratiwi, R. M., Nuridah, N., ... & Fitrina, Y. (2021). Knowledge, attitudes, and practices of indonesian residents regarding covid-19: A national cross-sectional survey. International Journal of Public Health Science, 10(2), 418-427. http://ijphs.iaescore.com/index.php/IJPHS/article/view/20722

Yodang, Y., Harisa, A., & Syahrul, S. (2021). Psychological Distress And The Sleep Quality In Older Patients With Chronic Disease. (JKG) Jurnal Keperawatan Global, 39-46. http://jurnalkeperawatanglobal.com/index.php/jkg/article/view/207

Zhang, T., Liu, C., & Ni, Z. (2019). Association of access to healthcare with self-assessed health and quality of life among old adults with chronic disease in China: Urban versus rural populations. International Journal of Environmental Research and Public Health, 16(14), 2592. https://doi.org/10.3390/ijerph16142592