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Analysis of influencing factors of burden of caregiver among stroke patients at home By Loetfia Dwi Rahariyani

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Journal of Public Health in Africa 2019; volume 10(s1):1188 Analysis of influencing factors disability can cause them to experience of burden of caregiver among stroke patients at home oanbdstasoclmese oinf ththeamaexptiveirtieenscofeddpaelnydelnivciengin, CProogreraspmonodfepncueb:liNciHkmeaalttuhl, FFaadcuillatyh, oDfoPcutobrlaicl living their lives, even stating that the qual- Health, Universitas Airlangga, Jl. Mulyorejo, ity of their lives decreases.1,2 Stressors are Surabaya, Jawa Timur 60115, Indonesia. Nikmatul Fadilah,1,2 Kusnanto,3 also considered high for stroke patients and Tel: +62315920948 - Fax: +62315924618. Nursalam,3 Loetfia Dwi Rahariyani2 their families, namely changes in the family Email: nikmatul.fadilah- 1Doctoral Program of Public Health, economy by a percentage of 100%.3,4 2017@fkm.unair.ac.id. Faculty of Public Health, Universitas Continuous stressors in stroke patients and Key words: burden, caregivers, stroke Airlangga; 2Polytechnic of Health, care providers will continue to be a strain patients. Ministry of Health, Surabaya; 3Faculty and burden for both physical / health, emo- of Nursing, Universitas Airlangga, tional, social and financial burdens.5-8 The Contributions: NF and LDR participated in Indonesia high burden felt by the caregiver is mani- design of study, data collecting and analyzing; fested as symptoms of anxiety, depression, NF, K, N participated in manuscript writing and low physical health.7,9 Caregivers and and references search. stroke patients who experience strains and Abstract burden during acute phase care in hospitals Conflict of interests: the authors declare no and rehabilitation phases at home, say they potential conflict of interests. The role of families in providing care are not ready to provide care, live dissatis- for stroke patients at home can cause ongo- faction (interpersonal and marital relation- Funding: the work was supported by ing stress, and can be a burden to care- ships), lack of well-being, and quality dete- givers. The purpose of this study was to rioration live both.1,10 analyze the influence of factors of age, sex, Caregivers' families should also receive education, employment, family relation- attention and support for their needs from ship, length of care, duration of care, health health care providers, so that they remain in PSCwouoalrnsyafbbeearpcyherhnaencsigecrnaloptneyfrtde.sHeenaattlatthito- hMne:inp3isartrdrty oIofnfteHhrinesaaltptihoaopnoeafrl Symposium of Public Health, 2018 October problems of caregiver, and deficit the best condition to still be able to provide s e 31- November 1, Universitas Airlangga, o neurology of stroke on the burden of care- support and care for family members who Surabaya, Indonesia. givers. Study used analytical design through have had a stroke, both informational sup- cross sectional approach. Samples of 120 Acknowledgment: the authors would like to caregivers were taken in 2 Puskesmas u thank to the Director of Polytechnic of Health, namely Pegirian and Pucang Sewu in Ministry of Health, Surabaya, Indonesia. Surabaya City with simple random sam- pling technique. Research instruments in [Dedication: the article is dedicated to Doctoral the form of](#) questionnaires compiled by Program of Public Health, Faculty of Public Health, Universitas Airlangga, Surabaya, researchers. Multiple linear regression used to analyze the influence of several factors ptappnrietohsaoidytroaniutcsn,Iv;ehcn.aae1eotnm1ien-,td1reiho2vntdeathetuiveeonbcorntufaviiioardotedilrmon;mtehsntinine,oodsonbfstufkrksutruhef ---, m Indonesia; and Polytechnic of Health, Ministry of Health, Surabaya, Indonesia. opcgelsselmtnaerrumtnooidptedskkelhneoeedoetryfs,topm.bhcnatuaafetrhtaintdeemehttgneh,eritneellvsryeb,seoonuurafigsilrrtsn,tdsechdaenlaon: aarctethilriep,teease,gmhntfifdeceveeuaaencdnrrrttgouahbotlcaiosenaompgttnrcraiyo000ogknboonege--ff,, ntgrfcvcci- aeoaaiiovmsdrrrnoceers,iylrlivmswigce.eoki5oesvo,1ltpufeel3a- rrvrtsmosbmTpa,beteahiillacodineysninamgadpm,tlahsiltaynuieevn(drmlcctedaiaacpbmrrqhyeeecuaarosntaiglesplioilivimyaetenyedxmtgrc)phsoaeeef4 [Received for publication: 28 July 2019. Revision received: 9 September 2019. Accepted for publication: 15 October 2019. This work is licensed under a Creative Commons Attribution NonCommercial 4.0 0.001\). No License \(CC BY-NC 4.0\).](#) care is influential against the burden of Family coping and/or effective/adaptive caregiver among stroke patients (p value care providers will bring families to achieve ©Copyright: the Author(s), 2019 a family resilience and feel a satisfying, Licensee PAGEPress, Italy prosperous, and quality life.15 The purpose [Journal of Public Health in Africa 2019; 10\(s1\): 1188](#) of this study was to analyze the influence of doi:10.4081/jphia.2019.1188 Introduction factors of age, sex, education, occupation, family relationship, length of care, duration The family is a unit that has an impor- of care, health care provider problems, and with simple random sampling technique. tant and major role in health care in the deficit neurology of stroke on the burden of community, including the function to main- care givers. Research instruments in the form of ques- tain health (health care function) for family tionnaires compiled by researchers. members who suffer from an illness. The Multiple linear regression used to analyze role of the family in maintaining the health Materials and Methods the influence of several factors on the bur- of family members is needed especially in den of caregiver among stroke patients. the treatment of chronic diseases including Study used analytical design through non-communicable diseases which current- cross sectional approach. Variables in this Ethical approval letter was gained from the ly tend to increase in prevalence both in study included burden of caregiver and its Health Research Ethics commission of of urban and rural areas, including strokes. influencing factors. Samples of 120 care- Health, Ministryof Health, Surabaya num- Changes in conditions experienced by givers were taken in 2 Puskesmas namely ber: 194/S/KEPK/V/2018 at 8th June 2018. stroke patients, especially the existence of Pegirian and Pucang Sewu in Surabaya City [page 70] [\[Journal of Public Health in Africa 2019; 10\(s1\): 1188\]](#) [Article](#) Results age (elderly); low education); employment tributes to the patient's degree of depend- (retired); hours of care provided; and men- ence which ultimately adds to the burden of This study showed several factors on tal health, while factors affecting stroke physical care for the care provider of stroke the burden of caregiver among stroke patients are physical disorders / weaknesses patients at home. Symptoms of residual on patients based on frequency distribution, R in motor and cognitive function of stroke stroke patients in this study include rigidity, square, F-value/Anova and T-test analysis. patients; depressive symptoms; decreased weakness, and / or extremity paralysis. The Table 1 shows that the highest caregiver verbal ability; walking difficulties and neu- age factor can also increase the level of burden is 10, the care provider of stroke rological deficits.9,11,16 dependence of stroke patients that have an patients is based on the highest age 52 years The caregivers reported that burden of impact on the burden of care. The highest (early elderly), the highest gender is caring among stroke patients highest was age of stroke patients was in the elderly women, the highest education is high physical

burden, this condition is related to group (46-65 years), even some included school, the status is not working / house- the duration of routine treatment, which is 2 the elderly category ( $\geq 65$  years). The phys- wives, the most family relationships as a hours / day. The condition of stroke patients iologically aging process of the neuromus- wife, long caring for patients Most strokes who have residual symptoms, especially cular system will reduce the physiological are 1 year, the duration of treatment is 2 stiffness / weakness / limb paralysis con- function of the limbs, especially the extrem- hours a day, there are no health problems, and most stroke patients have deficit neurology of stroke (Table 2). The R square value of 0.146 (14.6%) Table 1. Variable Frequency Distribution. shows that 14.6% variants of stroke care costs for stroke patients are affected by nine No Variable (n=120) Mode SD Min Max independent variables (age, sex, family 1 Caregiver burden 10 12.342 1 59 relationship, education, employment, length 2 Age 52 12.239 19 72 of care, duration of care, health problems at 3 Gender 2 Me224d.048i0annlyM24135e...7a39314n 0.444 1 2 home care givers, and deficit neurology of stroke); while the remaining 82.2% is influ- 4 Family relationship 2 2.00 2.32 0.860 1 4 enced by other factors outside the model 5 Education 3 s e 2.00 o 2.10 1.198 0 5 (other factors besides 9 variables in the 6 Employment 0 2.00 1.81 1.826 0 5 model). R value is 0.382, which means that 7 1T0ableD2e.fiTDcaiHutLbrenelaenetlugitohRtrhnopeloosorqffogbyucraaloaerfremicnesg.troikael u 1 1.00 1.863 2.201 0 18 the factors are age, gender, family relation- 8 2 2.00 2.98 2.558 0 12 ship, education, occupation, length of treat- 9 0 1.00 1.34 1.332 0 5 ment, duration of care, health problems of 2 2.00 2.26 1.470 0 7 home care givers, and deficit neurology of stroke have a moderate effect on the burden of care givers (Table 3). The test results of F sig 1.328 ( $> 0.05$ ),

ttschshohtadoregrimoptneekhT,t,eheahtdtheecoeuertadnhrrruwaeeectrscoieagutoanhtlnriicvtseoslaegunongrois,fosvefi,o,ecptearhngaamnerbree alrddetodlheereyeersef,mntfaifcfcieet(isaahTctnmntantnp,boioeblrInyueoelrieabcno4rngleofle)goell.nmuat,gchtegsyilnnouecnooodne-fff---cTRMeagobdrleeeslms3i.onTabl.3e6F9aS-vuamlu2oe4/f6A7S.n3q3.o1u43va6ar.es Model R R Square Adjusted R Square Std. Error of the Estimate 1 m .065 11.932 df Mean Square F N o 9 274.148 1.926 der, family relationship, education, occupa- Residual 15660.258 110 142.366 tion, length of care, health care problems of home caregivers, and deficit neurology of Total 18127.592 119 stroke on the burden of the care of stroke patients, and only the duration of treatment Table 4. T-test value. that affects the burden care provider for stroke patients. No Variable Unstandardized Standardized Coefficients Coefficients t Sig. B Std. Error Beta 1 (Constant) 25.123 9.587 2.621 0.010 Discussion 2 Age -0.039 0.111 -0.038 -0.346 0.730 Factors of age, sex, family relationship, 3 Gender 0.715 2.956 0.026 0.242 0.809 education, employment, length of care, 4 Family relationship -2.265 1.487 -0.158 -1.524 0.130 health problems at home care givers, and deficit neurology of stroke did not affect the 5 Education -0.236 1.103 -0.023 -0.214 0.831 burden of caregivers of stroke patients, and 6 Employment -0.378 0.655 -0.056 -0.577 0.565 only the duration of treatment which affect- 7 Long of caring 0.057 0.512 0.010 0.112 0.911 ed the caregiver burden of stroke patients. 8 Duration of caring 1.494 0.453 0.310 3.296 0.001 The strain and burden experienced by care- 9 Health problem -0.122 0.917 -0.013 -0.133 0.895 givers is influenced by gender (women); 10 Deficit neurology of stroke 0.334 0.785 0.040 0.425 0.671

[Journal of Public Health in Africa 2019; 10(s1): 1188] [page 71] Article ities, including decreased ADL ability.17 system based on religion/religion that 3. Haryati RTS, Sumarwati M, Handayani The care provider for stroke patients directs caring for sick family members, H. Pengaruh manajemen stres terhadap feels stress due to stoke attacks on their especially the elderly, to serve younger fam- kesiapan pasien stroke dan keluarga family members since the acute care period ily members to members older families, dalam merencanakan perilaku adaptif in the hospital / health care facility and the especially parents, as well as the wife's pasca perawatan di rumah sakit. Jurnal advanced treatment phase at home. service to her husband/partner.9 Keperawatan Indonesia 2004;8(1). Stressors during the rehabilitation period Caregivers of stroke patients have an Available from: <http://www.jkiui.ac.id>. are often linked to the needs of the patient important role in maintaining the health of Accessed on: 11 January 2018. for physical assistance to fulfill their families with stroke and other family mem- 4. Pambudi HA. Studi fenomenologis: needs.1,2 The highest age of care providers bers, especially if they act as mothers. Care kecemasan keluarga pada pasien stroke for stroke patients is the category of early providers and / or families of stroke patients yang dirawat di ruang HND Santo elderly (46-55 years) and female gender, need intervention to overcome the crisis sit- Lukas RS St. Elisabeth Semarang. most of which are the wives of patients. uation due to stroke. Although some studies Diponegoro University Institutional Based from the education of high school did not mention/conclude which therapies Repository 2009. Available from: care providers and some only elementary proved to be the most effective, some <http://eprints.unpad.ac.id>. Accessed on: school education. Most caregivers did not experts mentioned 3 interventions that had 3 March 2018. work (housewives), and some of them said the effect of reducing the burden of mild to 5. Collins L, Swartz K. Caregiver care. that since their husbands were sick they moderate care, namely psycho-education, American family physician tried to find additional income by entrepre- therapy, and supportive.9,18 Nurses as health 2011;83:1309-1317. Available from: neurship / selling at home. The burden of professionals who play a major role in pub- <http://www.aafp.org>. Accessed on: 3 care was felt to be especially hard during lic health care activities including families the initial period of home care, which was with strokes need to develop modification around one to two years at home. Most of interventions that support families, espe- caregivers said that they had treated a fami- cially caregivers who remain in optimal ly member who suffered a stroke for 1 year, health and show coping behaviors effective with the most duration of treatment for 2 in overcoming crisis conditions due to

CwtciaaohocrneihnIOs,ehchnditlphelayuseay,Istftehiahthdoeauptnftocrasroacasbtffoolfoeerfnmcao,tgsfeseemdo,tuhfpgrrlehaonotcybidmomuenre ft., s e 6.

MGScofatbrarreiouyrgnktr2ievo0Cek1IreA8sy.s,bumurOvradiInvaeaowngrse.se.lmaanAednOnntsA:tarl,asinoIsfoaiPnfchfccoyarsrSmicOnaagll. and o Rehabilitation Medicine hours. stroke in family members. u 2015;58:98-103. Health problems that are also experi- 7. Kumar R, Kaur S, Reddemma K. enced by caregivers of stroke patients can Burden and coping strategies in affect the perceived care burden of care for caregivers of stroke survivor. Journal of stroke patients, but in this study most had neurology and neuroscience 2015;S1:1- no health problems. Three major health 5. Available from: <https://doi.org/> problems reported to care for stroke patients 10.21767/2171-6625.S10005. Accessed in this study were fatigue, suffering from on: 2 April 2018. certain diseases, and irritability. This condi- 8. Vincent C, Derosiers J, Landreville P, tion is in line with previous studies that the et al. Burden of caregiver of people with hcpshuayfihyrgfmyrmpcechsceegpeitrbmitctvoueachiemnrlaadros.)sheel7ioeeng,9oiansi,sff1tlv,eeT5ehalrmdton.s7Sibaxl,a9eoyonibmefmiSet ff, naaigs(vm- PtnfrirfsaudepocimstcMlksektde)eme,oeodstafdehm.pisincrfaoawtmittatsuit)eaegilntonhlbieontausuinsinrlodgodifonirliovnfcgguioypspsmureiasar rt m stroke: evolution and predictors. Cerebrovascular Disease 2009;2:456- 464. 9. Chow SKY, Wong FKY, Poon C. Coping and caring: support for family caregivers of stroke survivor. Journal of Clinical Nursing 2007;16:133-143. (hypertension, diabetes mellitus, hypercho- N o 10. Mc Pherson CJ, Wilson KG, Chyurlia who provide care in groups and at home L, et al. The balance of give and take in lesterolemia) are included in the non-com- through home visits can be a comprehen- caregiver partner relationships: an municable disease category which should sive effort. examination of self-perceived burden, require management of regular and continu- relationships equity, and QoL from ous / long-term therapy and treatment to perspective of care recipients following avoid complications including stroke. Care stroke. Rehabilitation Psychology givers tend to ignore the health problems References 2010;55:194-203. they experience while caring for family 1.Handayani DY, Dewi DE. Analisis 11. Vincent C, Derosiers J, Landreville P, et members with strokes.18 Although care kualitasiduppasiandaneluargapasca al. Burden of caregiver of people with providers feel the burden of caring for fam- serangan stroke (dengan gejala sisa). stroke: evolution and predictors. ily members with strokes who need help PsychoIdea2009;7(1):35-44.Available Cerebrovascular Disease 2009;2:456- both physically and emotionally, they state from: <http://jurnalnasional.umj.ac.id>. 464. that caring for sick family members, espe- Accessedon:12January2018. 12. Wurtiningsih R. Dukungan keluarga cially husband/wife and parents is a role 2.Ogunlana MO, Dada OO, Oyewo OS, pada pasien stroke di ruang saraf RSUD responsibility that must be lived with sin- et al. Quality of life & burden of dr. Kariadi Semarang. Medica cerity as a form of devotion to husband/wife informal caregiver of stroke survivor. Hospitalia 2012;1:57-

59. or parents. This statement is a value/belief Hong Kong Physiotherapy Journal 13. Bjorh-dahl A, Nilsson AL, Sunnerhagen that is adhered to and influenced by a famil- 2014;32:6-12. Available from: KS. Can rehabilitation in the home ial culture in the majority of the country's <http://www.sceinedirect.com>. setting reduce the burden of caregiver population in Asia (Hong Kong) and a value Accessed on: 12 January 2018. for the next-of-kin of stroke victims?. J [page 72] [Journal of Public Health in Africa 2019; 10(s1):1188] Article Rehabil Med 2007;39:27-32. to The Family Resilience of Patients 14. Hernawaty T. 2015. Modul terapi with Stroke. Indian Journal of Public supportif keluarga: pada keluarga Health Research and Development dengan klien gangguan jiwa. Workshop 2018;9(11):194-199. Available from: Keperawatan Jiwa ke-IX, Depok, 25 <http://dx.doi.org/10.5958/0976-> Agustus 2015. Program Studi Ners 5506.2018.01721.7. Accessed on: 3 Spesialis I Keperawatan Jiwa. Fakultas January 2019. Ilmu Keperawatan Universitas 16. Rigby H, Gubitz G, Phillips S. A Indonesia. systematic review caregiver burden 15. Fadilah N, Kusnanto K, Nursalam N, et following stroke. International Journal al. Structural Models of Factor Relating of Stroke 2009;4:285-292. 17. Smeltzer SC, Bare BG. Brunner & Suddarth: Keperawatan Medikal Bedah. Edisi 8 Volume 2. Jakarta: Penerbit Buku Kedokteran EGC;2013. 18. Bakas T, Clark PC, Kelly-Hayes M, et al. Evidence for stroke family caregiver and dyad intervention: a statement for healthcare professionals from the American Heart Association and American Stroke Association. Stroke 2014;45:2836-2852. e o nly ercial u s m N o n-com [Journal of Public Health in Africa 2019; 10(s1):1188] [page 73]