Determinant Factors of Uncontrolled Hypertension in Rural Indonesia

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ABSTRACT

Uncontrolled hypertension can cause heart disease, stroke, kidney failure, so it is necessary to know the factors causing it to be able to provide education and preventive interventions. This study aims to determine the factors that influence uncontrolled hypertension in rural areas. The study used case control. Research respondents consisted of 225 hypertensive patients in rural Indonesia consisting of 194 patients with uncontrolled hypertension and 31 patients with controlled hypertension. The operational definition of uncontrolled blood pressure is if the measurement results in blood pressure $\geq$ 140/90 mmHg. Data were collected using a questionnaire consisting of demographic data, health history and lifestyle consisting of medication adherence, alcohol drinking habits, smoking habits, high sodium consumption, high fat consumption and exercise habits. Data analysis used chi square and logistic regression. Majority of uncontrolled blood pressure (86.2%), age over 55 years old (47.6%), female (78.2%), low education (84.9%), not working (52.4%), Overweight-obese (67.6%). The results of the analysis showed that the level of education (p=0.033; OR=8.735; 95%CI=1.187-64.290), high sodium consumption habits (p= 0.013; OR=3.311; 95%CI= 1.292-8.483) and medication adherence (p=0.002; OR=3.885; 95%CI=1.678-8.998). Education level, high sodium consumption habits and medication adherence influence uncontrolled hypertension in rural areas dominantly.

1. Introduction

Reducing the prevalence of hypertension by 25% by 2025 is one of the global targets for noncommunicable diseases [1]. But in fact, the prevalence of hypertension continues to increase in developing countries without any improvement in the level of awareness or control [2]. The prevalence of hypertension in Indonesia also shows an increase, in 2013 the prevalence of hypertension was 25.8% and increased to 34.1% in 2018 based on basic health research [3].

Based on the results of research, blood pressure in hypertension is influenced by age, gender, ethnicity,

smoking habits, drinking alcohol habits, excessive salt consumption, hypercholesterolemia, and secondary diseases [4- 8]. The prevalence of hypertension is higher in people with comorbidities such as diabetes with a prevalence of 64.5%, transient ischemic attack with a prevalence of 54.7%, and heart disease with a prevalence of 64.4% [9]. The prevalence of uncontrolled hypertension in the world is high. The results of the study in Zimbabwe stated that the prevalence of uncontrolled hypertension was 67.2% [6]. The results of a study at Jimma University Specialized Teaching Hospital, Ethiopia which stated that the incidence of uncontrolled hypertension was more than 52.7% [8], while the results of other studies stated that the prevalence of uncontrolled hypertension in Indonesia was more than 91% of all hypertensive patients [10].

Uncontrolled increase in blood pressure in hypertensive patients can cause organ damage due to structural or functional changes in the arteries and/or the organs they supply, including the brain, heart, kidneys, central and peripheral arteries and eyes. This is called Hypertension-mediated organ damage (HMOD) [11]. The results of the study used the cohort method showed that high blood pressure had a significant effect on the occurrence of heart failure, atrial fibrillation, chronic kidney disease, heart valve diseases, aortic syndromes, coronary heart disease, stroke and dementia [12]. Research states that the prevalence of stroke in hypertensive patients aged 50 years old is 20% of the population with a risk ratio of 4 and the prevalence continues to increase with age [13], whereas according to a study in Indonesia, hypertensive patients have a 2.87 times risk of stroke [14].

Uncontrolled hypertension can also increase the mortality rate of cardiovascular disease. Patients with uncontrolled hypertension have a higher risk of death from cardiovascular disease than patients without hypertension [15], [16]. Therefore, it is necessary to know the factors that influence uncontrolled hypertension as a basis for providing education and interventions to prevent the risk or complications of hypertension. The purpose of the study was to identify the factors that influence the incidence of uncontrolled hypertension in rural areas.

2. Methods

2.1 Research design
This research used case control method. The research was carried out in Banyumas Regency, Central Java, Indonesia from May – July 2021.

2.2 Sample
The sampling technique used purposive sampling. The research sample is patients who have been diagnosed with hypertension for at least 1 year, can communicate well, live in rural areas and are willing to be research respondents. Research respondents consisted of 225 hypertensive patients in rural Indonesia consisting of 194 patients with uncontrolled hypertension and 31 patients with controlled hypertension.

2.3 Research variable
The dependent variable in this study was blood pressure, while the independent variables were age, gender, last education, occupation, body mass index and health history which included a family history of hypertension, a history of heart disease, a history of diabetes mellitus, a history of stroke and a lifestyle consisting of from medication adherence, alcohol drinking habits, smoking habits, high sodium consumption, high fat consumption and exercise habits. The operational definition of uncontrolled blood pressure is if the measurement results in blood pressure > 140/90 mmHg [8].

2.4 Data collection methods and research instruments

Collecting data used a questionnaire consisting of demographic data, health history and lifestyle. Demographic data include age, gender, last education, occupation and mass index. Medical history which includes a family history of hypertension, a history of heart disease, a history of diabetes mellitus and a history of stroke. Answers for medical history were given a score of 1 if there is "yes" and a score of 0 if there is "no". Lifestyle consists of medication adherence, drinking alcohol habits, smoking habits, high sodium consumption, high fat consumption and exercise habits. The adherence behavior questionnaire used the Morisky Medication Adherence Scale (MMAS-8) [17]. The instrument has been translated into Indonesian and has been tested for validity and reliability with the results obtained valid for each question item (r>0.345) and reliable with a Cronbach's Alpha value of 0.764 [18]. It is said to be obedient if all aspects are met, if any of the 8 aspects are not fulfilled, it is said to be disobedient. Smoking and drinking alcohol habits were answered with "yes" and "no", if the answer is "yes" a score of 1 and if "no" a score of 0. High sodium consumption if more than 6 gr / day (1 tablespoon of salt) [19], [20]. High-fat eating habits if the respondent regularly consumes fatty foods, coconut milk, high-fat milk and fried foods [19], [20]. Regular exercise habits if the respondent regularly exercises or walks briskly for at least 30 minutes a day, 4-5 times a week [20], [21].

2.5 Data analysis
The data that has been collected is then tabulated and analyzed using the chi square test and logistic regression in SPSS 16.

2.6 Ethical considerations
The research has obtained ethical approval from the ethics committee of the Faculty of Health Sciences, Jenderal Soedirman University with Number: 419/EC/KEPK/V/2021. Before taking the data, the researcher gave informed consent first.

3. Result

3.1 Characteristics of respondents
The characteristics of the respondents can be seen in table 1. The majority of respondents have uncontrolled blood pressure (86.2%), age ≥ 55 years old (47.6%), female (78.2%), low education (84.9%), not working (52.4%), Overweight-obese (67.6%). Based on the medical history of respondents with uncontrolled hypertension, it is known that the majority of respondents have a family history of hypertension (52%), no history of heart disease (82.7%), no history of diabetes (74.7%), no history of stroke (82.7%).

The description of the respondent's lifestyle is shown in table 2. All respondents do not have the habit of drinking alcohol. The majority of respondents do not smoke (93.8%) and do not consume high-fat foods (64%). Respondents who experienced uncontrolled hypertension showed that the majority were non-adherent to treatment (69.8%), had high sodium consumption habits (47.1%) and did not have regular exercise habits (61.3%).

3.2 Factors that affect uncontrolled hypertension
The results of the bivariate analysis showed that the characteristics of the respondents that influenced the incidence of uncontrolled blood pressure were education level (p value 0.036; OR = 6.821; 95%CI = 1.312-35.474), while other characteristics of respondents such as age, gender, occupation, BMI, and medical history did not significantly influence the incidence of uncontrolled blood pressure in hypertension (p > 0.05).

Lifestyles that have an effect on uncontrolled blood pressure in hypertension are non-adherence to treatment (p value 0.001; OR = 3.978; 95%CI = 1.805-8.767) and high sodium consumption habits (p value 0.001; OR = 3,463; 95%CI = 1,476 -8.124), but the habit of drinking alcohol, smoking, high fat consumption habits and exercise habits did not significantly affect the incidence of uncontrolled blood pressure in respondents (p value > 0.05).

The results of logistic regression analysis in table 3 show the dominant factors that influenced the incidence of uncontrolled hypertension in respondents included: education level (p=0.033; OR=8,735; 95%CI=1.187-64,290), high sodium consumption habits (p=0.013; OR=3.311; 95%CI= 1.292-8.483) and medication adherence (p=0.002; OR= 3.885; 95%CI=1.678-8.998).

4. Discussion

The dominant factors that significantly influence the incidence of uncontrolled hypertension based on the results of the study are the level of education, medication adherence and high sodium consumption habits. The majority of respondents have low education. Education level is correlated with knowledge and level of understanding of a person towards health information. Knowledge of risk is the basis for behavioral change [22], [23]. One of the problems faced by hypertensive patients is lack of knowledge. The results of a study in Uzbekistan stated that 35.5% of hypertensive patients had inadequate knowledge about hypertension [24]. The results of a study in Iran stated that more than 50% of hypertensive patients studied with the Hypertension Knowledge Level Scale (HK-LS) had knowledge at the average level, while more than 19% had poor knowledge [25], even in a Sri Lankan study mentioned that 92% of hypertensive patients had inadequate knowledge of hypertension [26]. The results of the study in Zimbabwe also stated that in rural areas knowledge related to hypertension was low [27].

Hypertensive patients who have low knowledge about hypertension treatment and the risk of complications due to hypertension will tend to behave that is not in accordance with their lifestyle to prevent blood pressure from being controlled. Awareness of risk has a significant effect on behavior or lifestyle of hypertensive patients to prevent stroke [28].

The results showed that the habit of consuming sodium had an effect on uncontrolled blood pressure in hypertension. This result is also in accordance with previous studies which stated that excessive salt consumption was at risk of causing uncontrolled blood pressure [6], [7]. High blood sodium levels can cause fluid retention in the vasculature so that stroke volume increases which results in an increase in blood pressure. Rural people with low knowledge without realizing have the habit of consuming foods that are high in sodium. Foods that are often consumed with high sodium content include instant noodles, flavorings and salted fish [19], [20].

Medication adherence affects uncontrolled blood pressure significantly. The results of a systematic review and meta-analysis also showed that medication adherence had an effect on uncontrolled blood pressure in stroke patients with a history of hypertension [29]. Non-adherence to treatment in hypertensive patients because hypertension treatment takes a long time. High blood pressure in hypertensive patients may be asymptomatic. Hypertensive patients mostly take medication if they are symptomatic and stop the drug if they are asymptomatic. The results of the study stated that the factors that influence non-adherence to treatment include: forgetfulness, unexpected side effects, asymptomatic, unaffordable access to treatment services and irresponsibility for their health [30]. Hypertensive patients can take antihypertensives throughout their lives. Hypertensive patients are also disobedient due to lack of knowledge. The results of previous studies stated that lack of knowledge about therapy, lack of education, less permanent perception

and lack of awareness of complications that arise due to hypertension have a significant effect on the incidence of uncontrolled hypertension [6], [8], [31].

5. Conclusion

The majority of hypertensive patients in rural areas show uncontrolled blood pressure. Education level, medication adherence, high sodium consumption habits dominantly influence uncontrolled hypertension in rural areas. In order to control blood pressure in hypertensive patients, it is recommended to increase knowledge about lifestyle in hypertensive patients, reduce sodium consumption and improve medication adherence.

Conflict of interest

The authors declare no conflict of interest related to this study

6. References

[1] World Health Organization. (2019, September 13). Hypertension. https://www.who.int/news-room/fact-sheets/detail/hypertension

[2] Mohsen Ibrahim M. (2018). Hypertension in Developing Countries: A Major Challenge for the Future. Current hypertension reports, 20(5), 38. https://doi.org/10.1007/s11906-018-0839-1. PMID: 29717393.

[3] Ministry of Health of the Republic of Indonesia. (2019, April 10). The reports of the results of basic health research. https://www.litbang.kemkes.go.id/laporan-riset-kesehatan-dasar-riskesdas/

[4] Degli Esposti, E., Di Martino, M., Sturani, A. (2004).. Risk factors for uncontrolled hypertension in Italy. Journal of Human Hypertenson: 18, 207–213 https://doi.org/10.1038/sj.jhh.1001656

[5] Cordero, A., Bertomeu-Martínez, V., Mazón, P., Fácila, L., Bertomeu-González, V., Cosín, J., Galve, E., Núñez, J., Lekuona, I., & González-Juanatey, J. R. (2011). Factors associated with uncontrolled hypertension in patients with and without cardiovascular disease]. Revista espanola de cardiologia, 64(7), 587–593. https://doi.org/10.1016/j.recesp.2011.03.008

[6] Goverwa, T.P., Masuka, N., Tshimanga, M., Gombe, N.T., Takundwa, L., Bangure, D., Wellington, M. 2014. Uncontrolled hypertension among hypertensive patients on treatment in Lupane district, Zimbabwe, 2012. BMC Research Notes, 7:703. https://doi.org/10.1186/1756-0500-7-703

[7] Yang, L., Xu, X., Yan, J. (2014). Analysis on associated factors of uncontrolled hypertension among elderly hypertensive patients in Southern China: a community-based, cross-sectional survey. BMC Public Health 14, 903 https://doi.org/10.1186/1471-2458-14-903

[8] Tesfaye, B., Haile, D., Lake, B., Belachew, T., Tesfaye, T., Abera, H. 2017. Uncontrolled hypertension and assosiated factors among adult hypertensive patients on follow-up at Jimma University Teaching and Speliazed Hospitals: cross-sectional study. Research Report in Clinical Cardiology, 8:21-29. doi https://doi.org/10.2147/RRCC.S132126

[9] Saju, M. D., Allagh,K.P., Scaria,L., Joseph, S., Thiyagarajan, J.A. (2020). Prevalence, Awareness, Treatment, and Control of Hypertension and Its Associated Risk Factors: Results from Baseline Survey of SWADES Family Cohort Study. International Journal of Hypertension, Volume 2020, 1-7 https://doi.org/10.1155/2020/4964835

[10] Hussain, M.A., Al Mamun, A., Reid, C., Huxley, R.R., (2016). Prevalence, Awareness, Treatment and Control of Hypertension in Indonesia Adults Aged > 40 years : Findings from the Indonesia family life survey (IFLS). Plose one, 11(8):e0160922. DOI: 10.1371/journal.pone.0160922

[11] Unger, T., Borghi, C., Charchar, F. et al. (2020). 2020 International Society of Hypertension Global Hypertension Practice Guidelines. Hypertension. 75:1334-1357. doi: 10.1161/HYPERTENSIONAHA.120.15026.

[12] Fuchs, F. D., Whelton, P. K. (2020). High Blood Pressure and Cardiovascular Disease. Hypertension,75:285–292. https://doi.org/10.1161/HYPERTENSIONAHA.119.14240

[13] Goldstein, L.B., Adams, R., Albert, M.J., Appel, L.J., Brass, L.M., Bushnell, C.D. (2006). Primary prevention of ischemic stroke. Stroke, 37:1583–1633. https://doi.org/10.1161/01.STR.0000223048.70103.F1

[14] Ghani, L., Mihardja, L.K., Delima. (2016). Dominant risk factors of stroke in Indonesia. Buletin Penelitian Kesehatan, 44(1):49-58. DOI : 10.22435/bpk.v44i1.4949.49-58

[15] da Silva, T. L., Klein, C. H., Nogueira, A., Salis, L. H., de Souza E Silva, N. A., & Bloch, K. V. (2015). Cardiovascular mortality among a cohort of hypertensive and normotensives in Rio de Janeiro - Brazil - 1991-2009. BMC public health, 15, 623. https://doi.org/10.1186/s12889-015-1999-4

[16] Zhou, D., Xi, B., Zhao, M., Wang, L., & Veeranki, S. P. (2018). Uncontrolled hypertension increases risk of all-cause and cardiovascular disease mortality in US adults: the NHANES III Linked Mortality Study. Scientific reports, 8(1), 9418. https://doi.org/10.1038/s41598-018-27377-2

[17] Krousel-Wood, M., Islam, T., Webber, L. S., Re, R. N., Morisky, D. E., Muntner, P. (2009). New medication adherence scale versus pharmacy fill rates in seniors with hypertension. The American journal of managed care, 15(1), 59–66. PMID: 19146365

[18] Sinuraya, R.K., Destiani, D.P., Puspitasari, I.M. Diantini, A. (2018). Tingkat Kepatuhan Pengobatan Pasien Hipertensi di Fasilitas Kesehatan Tingkat Pertama di Kota Bandung Medication Adherence among Hypertensive Patients in Primary Healthcare in Bandung City. Jurnal Farmasi Klinik Indonesia, 7(2). doi: https://doi.org/10.15416/ijcp.2018.7.2.124

[19] Ministry of Health of the Republic of Indonesia. (2016, September 30). Regulation of the Minister of Health of the Republic of Indonesia Number 41 of 2014 concerning guidelines for balanced nutrition. https://kesmas.kemkes.go.id/perpu/konten/permenkes/pmk-no.-41-ttg-pedoman-gizi-seimbang

[20] Kementrian Kesehatan R I. (2013). Pedoman teknis penemuan dan tatalaksana hipertensi, Dirjen P2PTM, Jakarta. http://p2ptm.kemkes.go.id/uploads/2016/10/Pedoman-Teknis-Penemuan-dan-Tatalaksana-Hipertensi.pdf

[21] Williams, B., Mancia, G., Spiering, W., Agabiti Rosei, E., Azizi, M., Burnier, M., Clement, D. L., Coca, A., de Simone, G., Dominiczak, A., Kahan, T., Mahfoud, F., Redon, J., Ruilope, L., Zanchetti, A., Kerins, M., Kjeldsen, S. E., Kreutz, R., Laurent, S., Lip, G., … ESC Scientific Document Group (2018). 2018 ESC/ESH Guidelines for the management of arterial hypertension. European heart journal, 39(33), 3021–3104. https://doi.org/10.1093/eurheartj/ehy339

[22] Bandura A. (2004). Health promotion by social cognitive means. Health education & behavior : the official publication of the Society for Public Health Education, 31(2), 143–164. https://doi.org/10.1177/1090198104263660

[23] Beauchamp, M.R., Crawford, K.L. Jackson, B. (2018). Social cognitive theory and physical activity: Mechanisms of behavior change, critique, and legacy. Psychology of Sport and Exercise, 42,110–7. https://doi.org/10.1016/j.psychsport.2018.11.009

[24] Malik, A., Yoshida, Y., Erkin, T., Salim, D., Hamajima, M., (2014). Hypertension-related knowledge, practice and drug adherence among inpatients of a hospital in Samarkand, Uzbekistan. Nagoya Journal of Medical Sciences, 76: 255-263. PMID: 25741034; PMCID: PMC4345680.

[25] Zinat Motlagh, S. F., Chaman, R., Ghafari, S. R., Parisay, Z., Golabi, M. R., Eslami, A. A., & Babouei, A. (2015). Knowledge, Treatment, Control, and Risk Factors for Hypertension among Adults in Southern Iran. International journal of hypertension, 2015, 897070. https://doi.org/10.1155/2015/897070

[26] Kisokanth, G., Ilankoon, I.M.P.S., Arulanandem, K., Goonewardena, C.S.E, Sundaresan,K.T., Joseph, J., (2016). Assesment of knowledge on the didease, its complications and management strategies among hypertensive patients attending medical clinics at teaching hospital, Batticaloa, Sri Lanka. Journal of postgraduate institute of medicine, 3(E30): 1-11. http://doi.org/10.4038/jpgim.8097

[27] Chimberengwa, P.T., Naidoo, M. (2019). Knowledge, attitudes and practices related to hypertension among residents of a disadvantaged rural community in southern Zimbabwe. PLoS ONE, 14(6): e0215500. https://doi.org/10.1371/journal. pone.0215500

[28] Upoyo AS, Isworo A, Sari Y, Taufik A, Sumeru A, Anam A. Determinant Factors Stroke Prevention Behavior among Hypertension Patient in Indonesia. Open Access Maced J Med Sci. 2021;9(E):336-9. https://doi.org/10.3889/oamjms.2021.6040

[29] Upoyo, .AS., Setyopranoto, I., Pangastuti, HS. (2021). The Modifiable Risk Factors of Uncontrolled Hypertension in Stroke: A Systematic Review and Meta-Analysis. Stroke research and treatment, Volume 2021. https://doi.org/10.1155/2021/6683256

[30] Dave, G. J., Bibeau, D. L., Schulz, M. R., Aronson, R. E., Ivanov, L. L., Black, A., & Spann, L. (2013). Predictors of uncontrolled hypertension in the Stroke Belt. Journal of clinical hypertension (Greenwich, Conn.), 15(8), 562–569. https://doi.org/10.1111/jch.12122

[31] Wang, T. J., & Vasan, R. S. (2005). Epidemiology of uncontrolled hypertension in the United States. Circulation, 112(11), 1651–1662. https://doi.org/10.1161/CIRCULATIONAHA.104.490599

Table 1. Characteristics of research respondents (n=225)

Characteristics	Hypertension		p	OR (CI 95%)
	Uncontrolled (n=194)	Controlled (n=31)		
Age (years old)				
<55	87 (38.7%)	17 (7.6%)	0.400	1.493
≥55	107 (47.6%)	14 (6.2%)		(0.697-3.199)
Gender				
Male	18 (8%)	3 (1.3%)	>0.999	0.955
Female	176 (78.2%)	28 (12.4%		(0.264-3.453)
Education Level				
Elementary-Junior high school	191(84.9%)	28(12.4%)	0.036	6.821 (1.312-35.474)
Senior-College	3(1.3%)	3(1.3%)		
Working				
No work	118(52.4%)	15(6.7%)	0.266	1.656
Active work	76(33.8%)	16(7.1%)		(0.774-3.545)
BMI				
Overweight-obesity	152(67.6%)	24(10.7%)	>0.999	1.056 (0.425-2.619)
Normal	42(18.7%)	7(3.1%)		
History of HT in family				
Yes	117(52%)	16(7.1%)	0.473	1.425
No	77(34.2%)	15(6.7%)		(0.666-3.049)
History of Heart diseases				
Yes	8(3.6%)	4(1.8%)	0.066	0.290
No	186(82.7%)	27(12%)		(0.082-1.030)
History of DM				
Yes	26(11.6%)	5(2.2%)	0.778	0.805
No	168(74.7%)	26(11.6%)		(0.284-2.282)
History of Stroke				
Yes	5(2.2%)	1(0.4%)	0.594	0.794
No	189(84%)	30(13.3%)		(0.090-7.030)

Table 2. Lifestyle of research respondents (n=225)

Characteristics	Hypertension		p	OR (CI 95%)
	Uncontrolled	Controlled		
Medication adherence				
Non adherence	157(69.8%)	16(7.1%)	0.001	3.978
adherence	37(16.4%)	15(6.7%)		(1.805-8.767)
Drinking Alcohol				
Yes	-	-	-	-
No	194(86.2%)	31(13.8%)		
High sodium consumption				

Yes	106(47.1%)	8(3.6%)	0.003	3.463	
No	88(39.1%)	23(10.2%)		(1.476-8.124)	
High-fat consumption					
Yes	75(33.3%)	6(2.7%)	0.060	2.626	
No	119(52.9%)	25(11.1%)		(1.029-6.700)	
Smoking					
Yes	12(5,3%)	2(0.9%)	>0.999	0.956	
No	182(80.9%)	29(12.9%)		(0.203-4.493)	
Regular exercise					
No	138(61.3%)	23(10.2%)	0.892	0.857	
Yes	56(24.9%)	8(3.6%)		(0.362-2.030)	

Table 3. The results of multivariable analysis using logistic regression

Variables	*p*	OR/Exp(B)	CI 95%
Education Level	0.033	8.735	1.187-64.290
Medication Adherence	0.002	3.885	1.678-8.998
High sodium consumption	0.013	3.311	1.292-8.483
High-fat consumption	0.259	1.786	0.652-4.893

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THERAPEUTIC GROUP THERAPY TO PREVENT SMARTPHONE ADDICTION IN SCHOOL-AGED CHILDREN: THE INTERACTION BETWEEN SELF-EFFICACY AND SMARTPHONE ADDICTION

Journal ID : **AMJ-15-09-2022-10538**; Author : **Reza Fajar Amalia, Achir Yani S.Hamid, Ice Yulia Wardani,**

Abstract : Increasing the number of smartphone users in school-aged children improve the risk of addiction. Children with low self-efficacy tend to use a smartphone as a coping mechanism to create a safe feeling when confronted with an uncomfortable situation or pressure. This study aims to examine the impact of health education and therapeutic group therapy on smartphone addiction and self-efficacy and to investigate the relationship between self-efficacy and smartphone addiction in school-aged children. This study used a quasi-experimental design with a control group. A total of 69 school-aged children were included aged 9-12 years old (10.65 ± 0.785). The respondent was selected with purposive sampling. Intervention group 1 was given health education and therapeutic group therapy, and intervention group 2 was only given health education. Smartphone Addiction Scale (SAS) and Self Efficacy Questionnaire for Children (SEQ-C) were used to measure addiction and self-efficacy. Data were analyzed by using univariate and bivariate. There was a relationship between self-efficacy and smartphone addiction. The decrease in smartphone addiction was higher in intervention group 1, which was given health education and therapeutic group therapy (Mean diff 1.13; 95% CI; 0.052- 2.217). Self-efficacy was also higher in this group (Mean diff 4.46; 95% CI; 6.558- 2.377). Thus, therapeutic group therapy has a significant impact on smartphone addiction and self-efficacy in school-aged children (p-value < 0.05). Self-efficacy prevents children from smartphone addiction. Health education, combined with therapeutic group therapy, is recommended as an effective nursing intervention to prevent smartphone addiction in school children.

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Impact of Low Radiation on the Human Health, Particularly as a Risk for Cardiovascular Diseases and Cataract

Journal ID : AMJ-14-09-2022-10537; Author : Rasha Saad Aldoury,

Abstract : Since the atomic bomb on Hiroshima, Japan the world pay attention on radiation and a lot of studies have been carried out and many research centers were established around the world to investigate the radiation consequences on living creatures, particularly on human. The goal of the current work is to inspect the outcome of the concentration of the dose and its range that causes many cancer types such as leukemia and solid cancer, at what range of the dose it will be fuzzy, and unknown. Most of previous studies shows that there are certain limits in which the radiation considered that has no biological effect on the human being (No risk), while the data that came from epidemiology investigation contains different related factors that has relation with diagnosis such as environmental exposure, genetic, style of life, accuracy of diagnosis and sociodemographics, etc.). There are interesting reports concerning the alert of low dose and its risk that come out due to exposure to medical radiation, that must be taking care of which eventually have another effect on the human health rather than cancer, particularly cataract risk, the cardiovascular and hear diseases, at doses under 1Sv. It was found that even at low risk dose of radiation, there are another biological effect of radiation on human health such as cataract and cardiovascular diseases.

Virtual anatomy learning through the eye of ayurveda medical students in Sri Lanka during COVID 19 pandemic

Journal ID : AMJ-14-09-2022-10536; Author : Lanka Ranaweeera, G.V.P. Samaranayake, Eranda Cabral,

Abstract : Anatomy is the foundation stone of medical education. The COVID 19 pandemic imposed unexpected disruption to Anatomy education with most universities moving regular onsite classes to the online session. The purpose of this study was to identify the perceptions of Ayurveda medical students regarding virtual or online Anatomy learning. The study was conducted on 69 second-year Ayurveda medical students using a self-administrated questionnaire. The majority of the students (92.8%) did not have prior experience in online learning (OL) before the COVID 19 pandemic. Regarding the learning activities preferred by students prior to the COVID 19, 73.9% of students preferred the live lectures from the academic staff. It was evident that 92.8% of students believed that zoom cloud meeting is the most effective method of Anatomy in the OL platform. In order to improve their Anatomy dissection knowledge, 50.7% of students were suggested to show live Gross Anatomy dissection. The OL is more successful than onsite learning for the theory of Anatomy. Access to online materials (86.9%), learning from their own places (92.7%), the ability to stay at home (95.6%), interactivity of the class (56.5%), and the ability to record a meeting (88.4%) are the key advantages of OL. Reduced Interaction with the teacher (78.2%), technical issues (92.7%), lack of interactions with their colleagues (82.6%), poor learning conditions at home (71%), and social isolation (81.1%) are the main disadvantages that they must face in their online learning process. In the era of smartphones and the internet, it was indicated that the Ayurveda medical students prefer to be engaged in the hybrid system which includes online Anatomy lectures with onsite Anatomy practicals.

The effect of aerobic exercise on changes in in abdominal fat, arm fat, and abdominal circumference in overweight and obese students

Journal ID : AMJ-14-09-2022-10535; Author : Anshar, Sitti Muthiah, Hikmad Hakim, Muslim, Yusuf, Aco Tang,

Abstract : Overweight and obesity are medical conditions in which excess body fat, or adipose tissue, accumulates in the body to the extent that this fat accumulation can affect health, potentially reducing life expectancy. An individual can be defined as overweight if their BMI is 25-30 kg/m2, and obese if their BMI exceeds 30 kg/m2. However, the distribution of body fat especially in the mid-abdominal area has also been used to diagnose a patient as obese and currently waist circumference is believed to be a more accurate marker of obesity. Aerobic exercise is indispensable in the management of obesity, not just weight and fat loss, weight maintenance and fat reduction, and physical fitness in obesity. To find out whether aerobic exercise has an effect on changes in abdominal fat, arm fat and abdominal circumference of overweight and obese students. This study is a quasi-experimental study with pre and post test one group design with two measurements, before treatment after treatment. A total of 40 samples were recruited to participate in this study with predetermined inclusion and exclusion criteria. Aerobic exercise was given 2 times a week for 6 weeks. Belly fat and arm fat with a skinfold caliper and body composition monitor and belly circumference with a roll meter. Abdominal fat, arm fat and abdominal circumference decreased after giving aerobic exercise. Aerobic exercise is effective in reducing belly fat, arm fat and abdominal circumference of overweight and obese students.

Clinical Profile Circumcision of Hemophilia Patients in Haji Adam Malik General Hospital Medan

Journal ID : AMJ-14-09-2022-10534; Author : Olga Rasiyanti Siregar, Bidasari Lubis, Ulfatul Ulya,

Abstract : Surgery or invasive procedures can pose risks to patients with hemophilia. Circumcision performed on patients with hemophilia can pose risks such as prolonged bleeding, infection, longer wound healing and increased morbidity. Data on circumcis pediatric patients with hemophilia in Indonesia are still very few. The purpose of this study was to provide an overview of the clinical

condition of children with post-circumcision hemophilia. This is a descriptive study who observed 9 hemophilia patients underwent circumcision in Haji Adam Malik General Hospital. The demographics data of the patients were collected from medial record including age, family history of hemophilia, type and severity of hemophilia. Among 9 hemophilia patients who underwent circumcision in Haji Adam Malik General Hospital Medan, 66.67% cases were diagnosed as hemophilia at under 10 years old. From 33.33% of the cases, the diseases were in mild and severe conditions. After the circumcision, all the patients were hospitalized and monitored by the vital signs and signs of bleeding. About 66.67% cases were hospitalized for <5 days, and 33.33% for 5-7 days. In our study, we found 55.56% cases have minimal bleeding on surgical wound, 11,11% cases have an active bleeding on surgical wound, 11.11% cases have spontaneous bleeding, and 22.22% cases have no bleeding. The subtitutive treatment by Factor VIII and Factor IX concenctrates were given one hour before circumcision and continue to be given in the following days, 66.67% patients are given for <5 days and 33.33% patients for 5-7 days. Circumcision of children with bleeding disorders especially hemophillia should be done carefully by surgeons and hematologist under appropriate conditions at comprehensive hemophilia centers even though bleeding diatheses are not an absolute contraindications for the procedure.

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Prevalence and determinants of stunting among primary school girls in urban Surakarta City, Indonesia

Journal ID : **AMJ-13-09-2022-10530**; Author : **Yulia Lanti Retno Dewi, Amalina Shabrina, Amelya Augusthina Ayusari, Budiyanti Wibowrini, Joko Sudarsono, Sutartinah Sri Handayani, Dwi Rahayu,**

Abstract : Stunting remains a crucial issue in low- and middle-income countries. In Indonesia, interventions are mostly focused on children under two years old and rarely addressed older children. Stunted female children are at risk of becoming short-stature mothers which is one of the factors associated with stunting, thus may cause intergenerational effect. This cross-sectional study aimed to determine the prevalence and key determinants of stunting in primary school-age girls. A total of 177 girls from five randomly-selected primary schools in five districts were included in the study. Data were collected by questionnaire interviews with parents. Children's height was directly measured using microtoise and then calculated by WHO AnthroPlus to identify nutritional status. Our result revealed the prevalence of stunting among primary school girls in urban Surakarta City was 10.17%. Analyses showed significant determinants of stunting were short birth length (p<0.001, OR 8.21), low birth weight (p<0.001, OR 8.14) and infection in the past 6 months (p<0.05, OR 6.27). However, breastfeeding practice, maternal height, maternal education, family income, and toilet facility were not significantly associated with stunting in urban Surakarta.

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Determinant Factors of Uncontrolled Hypertension in Rural Indonesia

Journal ID : **AMJ-13-09-2022-10529**; Author : **Arif Setyo Upoyo, Yunita Sari, Saryono,**

Abstract : Uncontrolled hypertension can cause heart disease, stroke, kidney failure, so it is necessary to know the factors causing it to be able to provide education and preventive interventions. This study aims to determine the factors that influence uncontrolled hypertension in rural areas. The study used case control. Research respondents consisted of 225 hypertensive patients in rural Indonesia consisting of 194 patients with uncontrolled hypertension and 31 patients with controlled hypertension. The operational definition of uncontrolled blood pressure is if the measurement results in blood pressure > 140/90 mmHg. Data were collected using a questionnaire consisting of demographic data, health history and lifestyle consisting of medication adherence, alcohol drinking habits, smoking habits, high sodium consumption, high fat consumption and exercise habits. Data analysis used chi square and logistic

regression. Majority of uncontrolled blood pressure (86.2%), age over 55 years old (47.6%), female (78.2%), low education (84.9%), not working (52.4%), Overweight-obese (67.6%). The results of the analysis showed that the level of education (p=0.033; OR=8.735; 95%CI=1.187-64.290), high sodium consumption habits (p= 0.013; OR=3.311; 95%CI= 1.292-8.483) and medication adherence (p=0.002; OR=3.885; 95%CI=1.678-8.998). Education level, high sodium consumption habits and medication adherence influence uncontrolled hypertension in rural areas dominantly.

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Impact of Leadership Skill Training on Nurses Working Motivation

Journal ID : **AMJ-12-09-2022-10527**; Author : **Siti Fatimah Sa'at, Zakira Mamat@Muhamad, Shariza Abdul Razak, Norsyamlina Che Abdul Rahim, Zulkhairul Naim Sidek, Mazlinda Musa, Mohd Nazir Mohd Nazori, Nicholas Tze Ping Pang,**

Abstract : This study aims to investigate the effect of the leadership skill training module on motivation score of the nurses. Leadership skill does give a big impact on staff working motivation. Each leader should receive leadership skill training to ensure that they have good skill in managing their staff. Methods that had being used in this study is a cross-sectional- interventional study, 96 nurse managers and 400 nurses were selected from two teaching hospitals in Malaysia (2018-2019). Data were analyzed using descriptive and inferential statistics in SPSS 24. The results shown that the statistical analysis of the median of the nurses' motivation scores after the leadership skill training module has no significance (P=0.001). In conclusion, the results showed that nurses were not impressed with the leadership styles used by their managers. There was no change in the leadership style of the nurse manager despite being given training on leadership skills. Leadership skill training should give an implication for nursing management. A leadership skill training module, should being used to improve the nurses' leader's skill in managing their nurses. By improving the relationship between leaders and nursing staff, it will indirectly enhance the working motivation among them. Studies related to this area should be conducted more as it helps to improve knowledge to ensure the development of nursing leaders.

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Antimicrobial action of 4-((4,5-diphenyl-1H-imidazole-2-yl) diazenyl) benzoic acid as a new synthesized imidazole derivative

Journal ID : **AMJ-11-09-2022-10525**; Author : **Suad Yousef Aldorkee, Ali Abdul Hussein S. AL-Janabi,**

Abstract : Imidazole drugs are extensively used in the treatment of various fungal infections. Its derivatives have many biological activities. Synthesis and evaluation of antimicrobial activity of a novel derivative of imidazole has been studied. Ligand of 4-((4,5-diphenyl-1H-imidazole-2-yl) diazenyl) benzoic acid was prepared by reaction of 4,5-diphenyl imidazole with the diazonium dye. Its physical and chemical characteristics have been identified. An antimicrobial action was performed against bacteria and fungi using a disk diffusion method. The sold red ligand (C22H16N4O2) has a melting point of 210°C, a 425 nm UV spectrum and variable IR spectra. The ligand showed good antibacterial effect without antifungal activity. Gram-positive bacteria were more susceptible to the ligand than Gram-negative bacteria. The fungus Candida utilis was the only fungal species showing susceptibility to the ligand in MIC 7 mg/ml. The novel synthesized 4-((4,5-diphenyl-1H-imidazole-2-yl) diazenyl) benzoic acid has broad-spectrum antibacterial activities with less antifungal action. Gram-positive bacteria are most susceptible to the prepared imidazole derivative. The ligand may be considered a novel antibacterial agent and needs further pharmaceutical studies to confirm its ability to use for humans.

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Portrayal Social Media Usage by Adolescents in Rural Areas

Journal ID : **AMJ-10-09-2022-10522**; Author : **Ira Kusumawaty, Fadly, Tri Basuki Kurniawan, Yunike,**

Abstract : The urgent need to use social media not limited by time and place has become unstoppable among teenagers in rural areas. Wise management in social media can prevent adolescents from being trapped in maladaptive behavior to trigger dependency conditions. Initial studies on adolescents' use of social media in rural areas are essential to avoid the misuse of social media. This study aims to analyze adolescents' use of social media in rural areas. The involvement of 198 adolescents in the study came from six junior high schools located in rural areas. The study was found in six schools in the rural area of South Sumatra province and used a cross-sectional method. The determination sample was based on a purposive sampling technique according to the research sample criteria; each school was represented by 33 students who were determined using a simple random method, and data was collected by distributing questionnaires. Based on the analysis results, it is known that most participants use social media at night for 3-6 hours and the purpose of its use is to obtain information. WhatsApp was the most preferred by participants, and the duration of accessing social media among females was longer than males. It can be concluded that adolescents' use of social media must be appropriately managed with alternative approaches to prevent and deal with adolescent problems by collaborating with teachers, parents, and students. The use of social media must be adequately addressed through the formation of peer groups to create more discipline and responsible adolescence.

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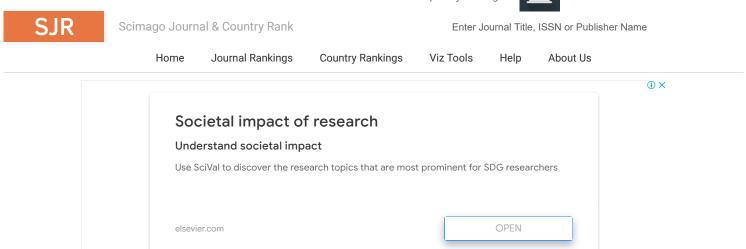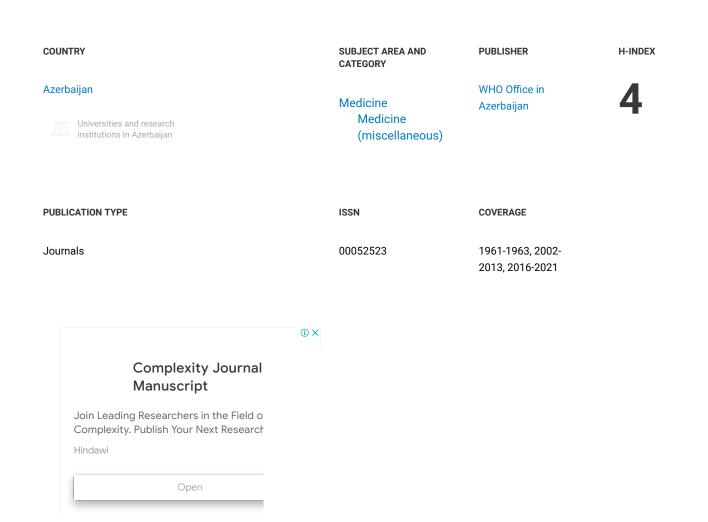
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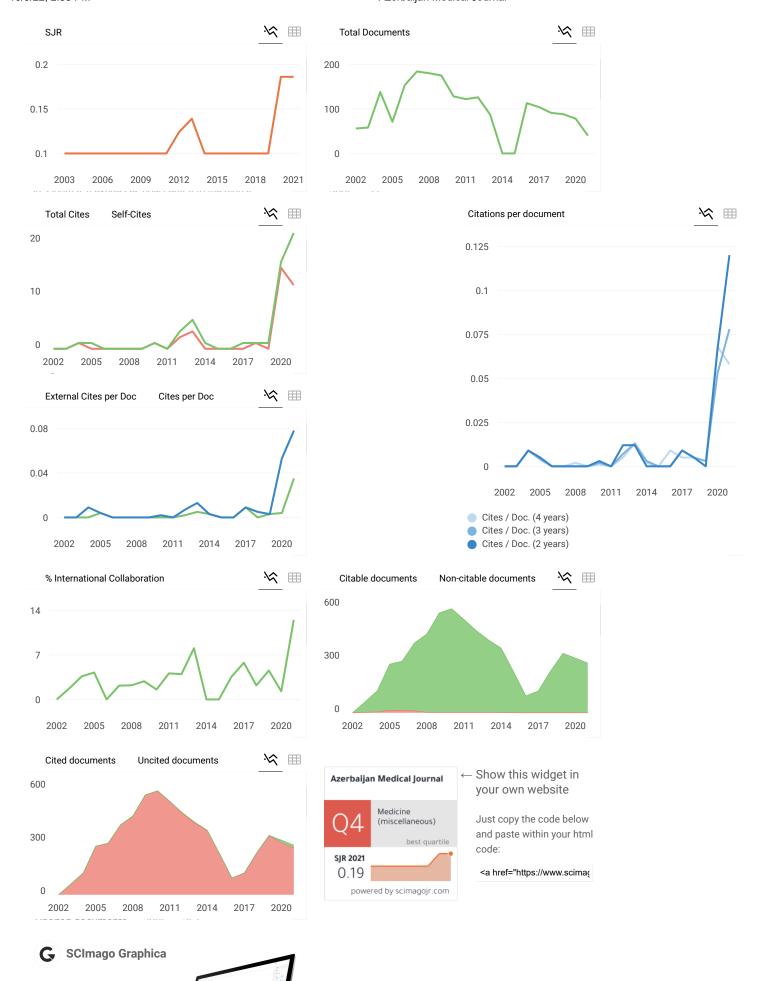
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