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PREVENTION OF HYPERTENSION RISK FACTORS IN ADOLESCENTS: SELF-EFFICACY AND PREVENTIVE PRACTICES

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Abstract

The double burden of communicable and non-communicable diseases (NCDs) since the beginning of 2020 in Indonesia has put adolescents at risk of developing hypertension. The purpose of this community engagement is to promote the eagerness and ability of adolescents to prevent hypertension from an early age, as we observed the increasing self-efficacy and hypertension prevention practices. The health promotion program was carried out at Darul Ilmi Middle School, Depok combining offline and online activities with as many as seven sessions with the involvement of the school authorities. A total of 68 students were included in this program. The results of this Health Promotion Program were: the release of the School Internal Supervisory Team Certificate for the implementation of health promotion activities to prevent hypertension risk factors; health promotion videos that can be used as media for health promotion activities to prevent hypertension risk factors; hypertension screening amongst the 68 students showed that 5.9% had blood pressure 140/90 mmHg; increasing adolescent self-efficacy of 61.76% and adolescent hypertension prevention practices of 60.29% after the implementation of 7 sessions of health promotion program to prevent hypertension risk factors. School involvement strengthens the implementation of health promotion programs for adolescents.

Keywords: Prevention of Hypertension; School Health; Health Promotion; Adolescents.

INTRODUCTION

Indonesia is experiencing a double burden of diseases, namely infectious and non-communicable diseases since the beginning of 2020. The infectious disease that has increased is the COVID-19 pandemic. The increase in Non-Communicable Diseases (NCD) in Indonesia affects the epidemiological pattern of infectious diseases to non-communicable diseases (NCD). Non-communicable diseases (NCDs) are mostly caused by unhealthy lifestyles that can be prevented by implementing healthy lifestyle behaviors. The increase in PTM cases based on Riskesdas (2018) and Riskesdas (2013), namely cancer (0.4%), stroke (3.9%), chronic kidney disease (1.8%), diabetes mellitus (1.6%), and hypertension (8.3%) (Kemenkes RI, 2019). Hypertension is the highest PTM which has increased from 2013 to 2018.

Riskesdas data (2018) shows that there has been an increase in key PTM indicators listed in the 2015-2019 RPJMN, including the prevalence of high blood pressure in the population aged 18 years and over increasing from 25.8% to 34.1%; the prevalence of

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smoking in the population aged 18 years increased from 7.2%. to 9.1%; the prevalence of Diabetes Mellitus in the population aged 15 years increased from 6.9% to 10.9%; and the prevalence of less physical activity in the population aged 10 years increased from 26.1% to 33.5% (Kemenkes RI, 2019). The prevalence of hypertension calculated from the age of 18 years indicates that health promotion activities regarding hypertension prevention should be given before the age of 18 years. The existence of a double burden of infectious and non-communicable diseases since the beginning of 2020 puts adolescents at risk of developing hypertension.

According to Law no. 23 of 2002 concerning Child Protection, adolescents are children aged 10-18 years. Adolescents are in a phase of physical and mental growth so it is an important phase in the development of health. The minimum number of adolescents who come to health services while at risk of experiencing health problems. Teenagers easily trust peers and social media so they are influenced by unhealthy behaviors such as unhealthy diet patterns, consuming snacks that are contemporary but not nutritious, or lack of physical activity due to playing games too often so they are lazy to move. This is a trigger for PTM in the future of teenagers. Adolescents can make choices in implementing healthy living behaviors (Kemenkes RI, 2018). Adolescents are at great risk of adopting unhealthy behaviors and developing chronic diseases. The adolescent phase is an important phase to implement healthy behavior so that it fosters lifelong healthy habits. Health literacy is the promotion of healthy behavior. Implementation of school-based health literacy interventions can be given to adolescents aged 12-16 years such as physical activity, diet, mental health, drug abuse, and sleep rest (Smith et al., 2021).

Prevention of hypertension needs to be given in adolescence so that they are willing and able to prevent hypertension. The results showed that there was a relationship between fat intake ($p=0.011$) and obesity ($p<0.01$) on hypertension in adolescents. Routine blood pressure checks and restriction of fat intake are needed to reduce the risk of hypertension in adolescents (Syah et al., 2020). Prevention of hypertension risk factors is effective early on to maintain normal blood pressure and prevent the development of high blood pressure. This phase contributes greatly to the health of young adults. The focus of prevention that can be given is the prevention of obesity, avoiding excessive salt, and eliminating barriers to physical activity, and healthy sleep patterns in childhood. Primordial prevention such as physical activity, low sodium, and potassium diet, prevention of sugary drinks, and sleep disorders (Falkner & Lurbe, 2020).

The results showed that self-management affected self-efficacy and physical activity behavior of State Junior High School students in North Jakarta ($p=0.000$). The intervention was given in seven sessions for six weeks (60-75 minutes per meeting). Adolescents are given a module for physical activity. Self-management interventions increase self-efficacy and adolescent physical activity behavior (Nurhafid, 2019). The results of this study indicate that the achievement of healthy living behavior in adolescents is influenced by many factors, one of which is self-efficacy. The more self-efficacy increases, the more physical activity behavior of junior high school students increases.

Non-communicable diseases are increasing in adolescence (10-14 years) and the peak burden is in the productive age group (Kemenkes RI, 2019). Adolescents in junior high school need health promotion in preventing hypertension. Adolescents as agents of change in

preventing the risk of PTM. Health promotion facilitates an understanding of the value of interventions (Bay et al., 2017). Adolescents as agents of change can become role models for healthy living and disseminate health information through social media (Kemenkes RI, 2019). Health promotion that focuses on risk factors for hypertension in adolescents is needed to prevent hypertension from an early age at the junior high school level.

Most of the time children are in school so schools contribute to the prevention of hypertension through UKS activities. Barriers to health promotion in preventing risk factors for hypertension in adolescents in Indonesia are that there are no regulations on the nutritional content of students' meals, the lack of a teacher's role in health education due to high academic demands, and the lack of parental involvement (Kayuningtyas & Ismayani, 2020). Health promotion in preventing hypertension risk factors will involve school participation and support.

Darul Ilmi Junior High School is an educational unit with a junior high school level located in Limo, Limo District, Depok City, West Java. Data for SMP Darul Ilmi Depok (2021), the number of students is 196 people consisting of 6 classes. Community service activities carried out at Darul Ilmi Middle School aim to increase the willingness and ability of adolescents to prevent hypertension from an early age, which is marked by increased self-efficacy and hypertension prevention practices in adolescents at Darul Ilmi Junior High School Depok.

IMPLEMENTATION METHOD

The population in this activity is the students of SMP Darul Ilmi Depok. The number of participants involved in this activity was 68 teenagers who were representatives of each class (6 classes), namely 25 students in grade 9, 21 students in grade 8, and 22 students in grade 7. The assessment was carried out by distributing questionnaires consisting of demographic data, self-efficacy, and practice of preventing hypertension risk factors in adolescents. The assessment was carried out before the activity started as pretest data. Participants who have filled out the questionnaire via the provided google form will join the WhatsApp group. The method of activity is a combination of offline and online. Every offline meeting at school by implementing strict health protocols.

Risk factors that influence the development of hypertension in adolescents are age, ethnicity, genetic factors, obesity, lack of physical activity, psychosocial stress, low education, unhealthy eating patterns such as high fat and salt, excessive alcohol consumption, and socioeconomic status (Smeltzer & Bare, 2015). These risk factors become indicators in data collection instruments (questionnaires) and health promotion topics given to adolescents.

The health promotion program to prevent hypertension risk factors in adolescents is an integral part of the nursing process whose activities are determined based on the Nursing Intervention Classification (NIC) and related evidence-based nursing (EBN).

Table 1. Stages of Implementation of Activities

No	*Nursing Intervention Classification* (NIC)	Method
1	Community health support	- Question and answer discussion - Coordination of WhatsApp group (WAG) - Online (zoom)
2	- Community health support (School Supervisory Team) - Health Education - Teaching: hypertension disease process	- Interactive discussion - wag coordination - Mutual agreement - Online (zoom)
3	- Health Education - Teaching: hypertension disease process - Facilitate learning (WhatsApp group (wag)	- Educational videos - Online (WAG)
4	- Community health support - Health Screening Health Education - Teaching: hypertension disease process - Improved self-efficacy - Group support - Cognitive stimulation	Watch videos, PPT, Interactive Discussions, guidance, and focus group discussions (FGD) Offline (Classes at School) and online (for those unable to attend)
5	- Health education - Improved exercises: rhythmic gymnastics and workbook - Cognitive stimulation - Teaching: disease process - Community health support - Group teaching	Interactive discussions, PPT, youtube videos, and gymnastics practice Offline (Classes at School) and online (for those unable to attend)
6	- Health education (prevention of hypertension risk factors) - Teaching: disease process (hypertension) - Increased self-efficacy (impact of smoking, alcohol, and stress) - Community health support	Interactive discussions, PPT, youtube videos, and illustrations of the organs of smokers and alcoholics Offline (Classes at School) and online (for those unable to attend)

No	*Nursing Intervention Classification* (NIC)	Method
	(School Supervisory Team) - Cognitive stimulation (illustration of cigarettes and alcohol in the body)	
7	- Cognitive stimulation - Improved training	Interactive discussion, positive reinforcement Offline (Classes at School) and online (for those unable to attend)

Sumber: (Bulechek, Butcher, Dochterman, & Wagner, 2018)

Blood pressure assessment is carried out at every offline meeting at school. After 7 sessions of activity, adolescents filled out the questionnaire about self-efficacy and the practice of preventing hypertension risk factors in adolescents. Filling out the questionnaire after the activity as post-test data. Data analysis used the dependent t-test to analyze the effect of health promotion on self-efficacy and the practice of preventing hypertension risk factors in adolescents.

RESULTS AND DISCUSSION

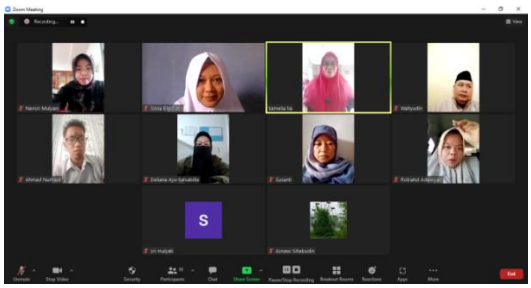

Figure 1. Meeting with the School Supervisory Team via zoom

Figure 2. Opening of activities by the Principal

Table 2. Distribution of Characteristics of Darul Ilmi Middle School Students, Depok (n = 68)

Characteristics	Total (n=68)	
	F	%
Age		
11 year	2	2,9
12 year	10	14,7
13 year	26	38,2
14 year	21	30,9
15 year	8	11,8
16 year	1	1,5
Body mass index (IMT)		
Malnutrition (*thinness*)	11	16,2
Good nutrition (normal)	41	60,3
More nutrition (*overweight*)	16	23,5
Gender		
Man	22	35,3
Woman	44	64,7
Tribes		
Jawa	29	42,6
Sunda	9	13,2
Betawi	27	39,7
Minang	2	2,9
Other	1	1,5
Income		
≤ Rp.4.339.514,-	43	63,2
> Rp.4.339.514,-	25	36,8
Education		
1 junior high school	22	32,4
2 junior high school	21	30,9
3 junior high school	25	36,8
Pressure Check		
Blood	32	47,1
Never	36	52,9
Once		
Extracurricular activities		
Do not follow	26	38,2
Follow	42	61,8

Table 2 shows that almost half of the students involved were 13 years old and most had a normal BMI or good nutrition. A small proportion is overweight, which is 23.5%. The results of this study also found that most of them were female and almost half were Javanese. Most of the parent's income is Rp. 4,339.514, - (UMR). Almost half of them took third-grade

junior high school education (36.8%). Most of the students have had their blood pressure checked and participated in extracurricular activities. Extracurricular activities are not carried out during the covid-19 pandemic and online learning.

The results of the study showed that almost half of them were 13 years old. This number is influenced by the proportion of students who take part in health promotion activities in each generation. Most junior high school students in Indonesia fall into the category of early teens, namely ages 13-15 years as much as 86.27% (Kemdikbud, 2016). The results of other studies on junior high school students also found that the majority of respondents were in their early teens (12-14 years). Early adolescence did not experience obstacles in participating in the health intervention sessions that were given until the end. Students can understand the material presented and demonstrate the material that has been delivered in groups under the guidance of the facilitator (Nurhafid, 2019).

Most have normal BMI or good nutrition. A small proportion is overweight, which is 23.5%. Based on Riskesdas data (2018), the prevalence of obesity at the junior high school level is 12.1% (Kemenkes RI, 2019). The results of other studies showed that there was a relationship between fat intake ($p=0.011$) and obesity ($p<0.01$) on hypertension in adolescents. Routine blood pressure checks and restriction of fat intake are needed to reduce the risk of hypertension in adolescents. High cholesterol levels are at risk for developing hypertension. Fat intake and obesity are associated with hypertension in adolescents. A limitation of fat intake is needed to reduce the risk of hypertension in adolescents (Syah et al., 2020).

The results of this study also found that most of them were female. This is supported by the results of research on junior high school students which states that most of the research respondents are women (60.3%). Gender characteristics in junior high school students do not pose obstacles during the intervention process (Nurhafid, 2019). There is a significant relationship between gender and hypertension. Women are less likely to have hypertension than men. The risk of hypertension in women and men varies by age level. At the age <30 years, women are less likely to have hypertension than men. Increasing age in women increases the risk of hypertension. This condition can be influenced by hormones. A decrease in estrogen or an increase in testosterone induces insulin resistance and atherogenic lipids that cause atherosclerosis in blood vessels (Bantas & Gayatri, 2019).

Almost half of them are Javanese. This is supported by the location of the health promotion activity area in the community, which is mostly Javanese. The results showed that ethnicity or culture is a risk factor for hypertension associated with favorite foods. Tribes also influence people's habits and perspectives (Putri, 2021).

Most of the parent's income is Rp. 4,339.514, - (UMR). Other research results show that work is related to income to make ends meet. A conducive work environment and good economic conditions can reduce the risk of hypertension (Song & Li, 2019). Parental income also affects families by providing healthy food, physical activity, stress management, and easy access to health information.

Almost half of them took third-grade junior high school education (36.8%). The results showed that the higher the level of education, the higher the level of awareness about hypertension (Song & Li, 2019). Education affects the individual's ability to absorb information, find solutions to solve problems and behave well. Low education makes it

difficult for individuals to accept and understand the directions and instructions recommended by nurses in carrying out health care. Education relates to his perception of the threat of a disease, the seriousness of the disease, and consideration of the benefits and disadvantages of taking an action in health efforts (Putri et al., 2021).

Early detection of elevated blood pressure is important to prevent conditions related to hypertension, namely organ damage, left ventricular hypertrophy, and cerebrovascular disease (Bussenius et al., 2018). Most of the students have had their blood pressure checked and participated in extracurricular activities. Extracurricular activities are not carried out during the covid-19 pandemic and online learning. Hypertension screening is needed by students to determine the condition of their blood pressure. Screening results showed that 5.9% (4 students) had a blood pressure of 140/90 mmHg.

This health promotion activity is carried out through the provision of health education, teaching: the hypertension disease process, community health support, cognitive stimulation, facilitating learning, group support and teaching, and increasing practice by making health promotion media in the form of videos, the existence of youth workbooks to observe behavior changes. in the practice of a healthy lifestyle in the prevention of hypertension risk factors.

Self-efficacy before and after health promotion was measured using a self-efficacy questionnaire consisting of 18 statements with a value range of 18-72. Hypertension prevention practices before and after health promotion were measured using a hypertension prevention practice questionnaire consisting of 15 statements with a range of 15-60 values.

Table 3. The Effect of Health Promotion on Self-Efficacy and Hypertension Prevention Practices at Darul Ilmi Junior High School Depok (n = 68)

Dependent Variable	*Mean*	*P value**
Self Efficacy		
- Before	56,13	0,006
- After	58,07	
Preventive Practices		
- Before	38,59	0,005
- After	40,81	

**p value* signifikan < 0,05

Based on table 3, it can be seen that there are differences in self-efficacy and different hypertension prevention practices before and after activities in the intervention group. The results of the analysis using the dependent t-test found that there was an effect of health promotion on self-efficacy and the practice of preventing hypertension risk factors in adolescents.

Increasing self-efficacy in nursing care is one of the recommended nursing interventions to solve nursing problems of readiness to improve health management in the Nursing Interventions Classification (NIC). Increased self-efficacy is the strengthening of individual self-confidence regarding their ability to carry out a healthy life (Bulechek, Butcher, Dochterman, & Wagner, 2018). Self-efficacy is a very important factor in hypertension self-management (Ding et al., 2018). The results of other studies show that measuring self-efficacy in hypertension health problems is an important thing because it can improve

hypertension control. The higher the self-efficacy, the greater the opportunity and opportunity for individuals to implement healthy behaviors and lifestyles. Self-efficacy increases an individual's belief that he or she can implement behaviors that lead to healthy outcomes as expected (Putri, 2017).

Figure 3. Students Presenting a Healthy Diet
Source: personal documents (2021)

Figure 4. Interactive Discussion
Source: personal documents (2021)

After health promotion, there was an increase in adolescent self-efficacy by as much as 61.76% and an increase in adolescent hypertension prevention practices by as much as 60.29% after being given health promotion to prevent hypertension risk factors. Health education, teaching: hypertension disease process, community health support, cognitive stimulation, facilitating learning, group support and teaching, and increasing exercise that are part of the NIC are effective activities to increase self-efficacy and practice of preventing adolescent hypertension risk factors.

CONCLUSION

Based on various activities that have been carried out from sessions 1 to 7, it was concluded that there was an increase in self-efficacy and hypertension prevention practices in adolescents after being given health promotion to prevent hypertension risk factors in adolescents. Another impact that resulted was the issuance of the Decree of the School Internal Supervisory Team in the implementation of health promotion activities to prevent hypertension risk factors and optimizing health promotion videos as a medium for routine health education in schools.

Health promotion programs on preventing hypertension risk factors in adolescents that are integrated with school activities are important to be carried out by involving the active role of adolescents and schools. The active involvement of schools further strengthens the implementation of health promotion programs for adolescents and the sustainability of subsequent programs for adolescents.

REFERENCES

Bantas, K., & Gayatri, D. (2019). Gender and Hypertension (Data analysis of The Indonesia Basic Health Research 2007). Jurnal Epidemiologi Kesehatan Indonesia, 3(1), 7–18. https://doi.org/10.7454/epidkes.v3i1.3142

Bay, J. L., Vickers, M. H., Mora, H. A., Sloboda, D. M., & Morton, S. M. (2017). Adolescents as agents of healthful change through scientific literacy development: A school-university partnership program in New Zealand. International Journal of STEM Education, 4(1). https://doi.org/10.1186/s40594-017-0077-0

Bulechek, G. M., Butcher, H. K., Dochterman, J. M., & Wagner, C. M. (2018). Nursing Interventions Classification (NIC). 7th Indonesian edition. Indonesia: Mocomedia

Bussenius, H., Zeck, A. M., Williams, B., & Haynes-Ferere, A. (2018). Surveillance of Pediatric Hypertension Using Smartphone Technology. Journal of Pediatric Health Care, 32(5), e98–e104. https://doi.org/10.1016/j.pedhc.2018.04.003

Ding, W., Li, T., Su, Q., Yuan, M., & Lin, A. (2018). Integrating factors associated with hypertensive patients' self-management using structural equation modeling: A cross-sectional study in Guangdong, China. Patient Preference and Adherence, 12, 2169–2178. https://doi.org/10.2147/PPA.S180314

Falkner, B., & Lurbe, E. (2020). Primordial prevention of high blood pressure in childhood an opportunity not to be missed. Hypertension, 1142–1150. https://doi.org/10.1161/HYPERTENSIONAHA.119.14059

Kemenkes RI. (2018). Hasil Utama Riskesdas 2018.

Kemenkes RI. (2019). Profil Kesehatan Indonesia 2018 [Indonesia Health Profile 2018]. http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi_Profil-Kesehatan-Indonesia-2018.pdf

Nurhafid, S. A. (2019). Pengaruh manajemen diri terhadap efikasi diri dan perilaku aktivitas fisik siswa SMP Negeri di Jakarta Utara. In Fakultas Ilmu Keperawatan Universitas Indonesia. Universitas Indonesia.

Putri, I. R. (2017). Hubungan antara efikasi diri dengan manajemen diri pada klien hipertensi di RT 001/RW 030 Perumahan Alamanda Regency, Kabupaten Bekasi, Jawa Barat.

Putri, S. E. (2021). Pengaruh manajemen diri terhadap kepatuhan merawat dirindan status kesehatan lansia dengan hipertensi di Kota Pekanbaru (Vol. 3, Issue 2). Universitas Indonesia.

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. 10 (s1)(2406). https://doi.org/Doi.org/10.4081/jphr.2021.2406

Smeltzer, C. S & Brenda G. B. (Ed). (2015). Buku ajar keperawatan medical bedah Brunner & Suddarth Edisi 8 (Kuncara, H.Y, dkk, Penerjemah.). Vol. 2. EGC: Jakarta

Smith, C., Goss, H. R., Issartel, J., & Belton, S. (2021). Health literacy in schools? A systematic review of health-related interventions aimed at disadvantaged adolescents. Children, 8(3). https://doi.org/10.3390/children8030176

Song, S., & Li, H. (2019). Study on Risk and Influencing Factors of Hypertension in Chinese Elderly. Gerontology and Geriatric Medicine, 5, 1–12. https://doi.org/10.1177/2333721419877978

Syah, M. N. H., Wahyuningsih, U., Ardiansyah, S., & Asrullah, M. (2020). Hypertension and Related Factors Among Female Students At Vocational High School Bekasi, Indonesia. Media Gizi Indonesia, 15(3), 219. https://doi.org/10.20473/mgi.v15i3.219-224