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The Impact of Community-based Health Education to Improve Quality of Nursing Services for People with Hypertension: A Literature Review

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Abstract_ **Background: Essential hypertension is the most popular catastrophic case in Indonesia referred from primary health services to hospitals. High number of morbidity and mortality caused by hypertension increases financial burden of a state for catastrophic diseases. The current effort of our government to prevent and control hypertension is by health promotion through confirmation, information, and education. However, the facts that hypertension prevention keeps on developing making it a continuous global challenge for the professionals of health services. This is the reason why it's important to investigate interventions that could increase control the blood pressure. The aim of this systematic review is to gain the best literatures about health education on community-based hypertension prevention that has potential strength to regenerate clinical practice recommendations to improve preventive and promotive efforts for hypertension. Method of this literature review was using systematic searching of electronic databases from Google and Pubmed by following keywords: hypertension intervention strategies + journal, community based hypertension control programs that work + journal, hypertension AND community based health education, hypertension AND community-based nutrition DASH, hypertension AND community based control programs. Inclusion criteria of the study focused on community-based education interventions for hypertension and have completed explanation about it while exclusion criteria of the study was all articles that younger than the last 10 years. 13 articles based on the above criteria were chosen to proceed. Results of the study show that all researches were done in developed countries and most of the articles were using quantitative methods. Community-based health education for people with hypertension is an effort to help hypertension control programs. There are four health interventions related to community-based hypertension education program which are mass media campaign to reduce salt consumption, workshop programs through social volunteering or health activists, hypertension group education about DASH and lifestyle then comprehensive hypertension prevention and promotive programs. Community-based health education approaches through these interventions could be used to control the uncontrollable hypertension in the community. Multicomponent and multilevel cooperation as well as financially effective efforts to prevent, detect and manage hypertension could be gained by implementing all of these interventions.**

Keywords: hypertension prevention and management, health education, community-based programs

Introduction

Essential hypertension is the most popular catastrophic case in Indonesia that is referred from primary health services to the hospital [14]. The number of hypertension case based on diagnosis or symptoms increases almost in all provinces by 1,9% or it is around 9,5% today [12]. The findings at 15 regencies/cities in Indonesia show a phenomenon that 17,7% of all death caused by stroke and 10% was precipitated by ischemic heart disease as the 'soulmate factor' of hypertension [12]. Among 25,8% people with hypertension, there is only 1/3 of them who are diagnosed meaning that the others remain undiagnosed [12]. This shows that most of people with hypertension are not aware about their condition especially in looking for treatment. The high number of morbidity and mortality due to hypertension increases the country expenses burden for catastrophic case.

National financing health coverage or known as *Pembiayaan Jaminan Kesehatan Nasional* (JKN) by the year 2015 showed that 0,8 participants or about 1,3 million people received services for catastrophic disease which have spent 13,6 billion rupiah or 23,9% of budget. The current effort of our government to prevent and control hypertension is by health promotion through 'CERDIK' behaviours which is included in KIE program. Besides that, self awareness from the community is encouraged by promoting routine blood pressure check-up [6]. However, the facts that hypertension prevalence keeps increasing by aging and poor life style would make it a continuous global challenge for the professional health services [11]. This is the reason why it is important to investigate interventions that could increase control of blood pressure. By collecting the best literatures about community-based health education for hypertension prevention, this could potentially renew recommendation for clinical practice in their effort to improve prevention and promotion quality for people with hypertension.

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Method of Study

Searching strategy for this review was done using electronic databases from Google and Pubmed by limitation of titles, abstracts and texts. References list searching and bibliographies from downloaded articles relevance to the research question. Keywords that were used for this review :community based hypertension programs+journal, hypertension and community-based health education, hypertension and community- based nutrition dash, hypertension and community based control programs.

Table 1. The Summary of Chosen Articles Based on Inclusion Criteria

Literature searching	The Summary of Chosen Articles	
	Gained Journals	Journals that fulfill criteria of inclusion
Pubmed	824	7
Google Scholar	33.100.000	3
Snowball technique	25	3
Total	**33.100.849**	**13**

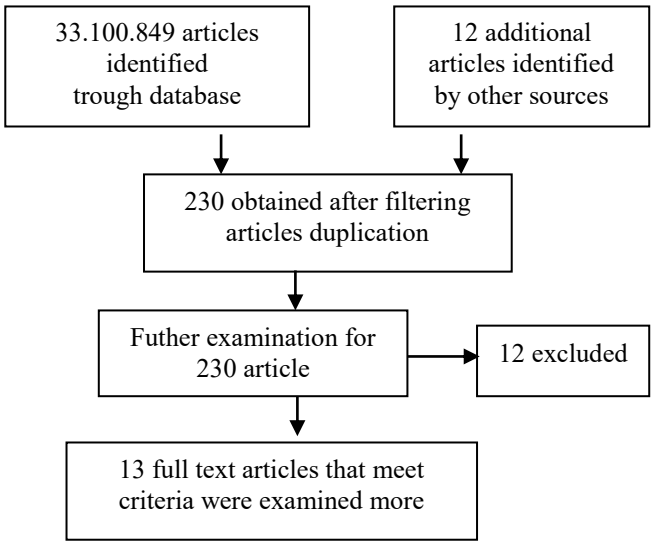

Fig 1. Literature search diagram

Result of Review

There are 13 reviewed researches which all of them focused on benefit of community-based health education application for people with hypertension. Most of reviewed researches are performed in developed countries (Table 2). Various objectives of study and methods are found among those researches, which are summarized in Table 3. Based on all 13 reviewed journal articles, there are 4 kinds of effective community-based interventions obtained, which are :

1. Mass media campaign to reduce salt consumption.
2. Hypertension workshop program through social activity or volunteering in health sectors
3. Education in group for people with hypertension about Diatary Approaches to Stop hypertension (DASH) and lifestyle
4. Comprehensive prevention and management program for hypertension

Table 2. Countries of Research Site

Country	Researcher
Nepal	Neupane et al (2016)
India	Abdel-All M. et al (2018)
India	Mohan S. et al (2018)
South Africa	Wentzel-Viljoen E. et al (2017)
England	Sutherland et al (2013)
Georgia	Ivery et al(2017)
USA	Baker et al(2016)
USA	Dodani, Arora&Kraemer (2014)
Australia	Sarmugam, Worsley&Wang (2013)
South Africa	Ronquest-Ross, Vink&Sigge (2015)
Japan	Tamaki et al (2004)
Colombia and Malaysia	Schwalm et al (2018)
Ghana	Lamptey et al (2017)

Table 3. Method of Study

Method	Researcher
Quantitative	Neupane et al (2016)
Quantitative	Abdel-All M. et al (2018)
Quantitative	Mohan S. et al (2018)
Quantitative	Wentzel-Viljoen E. et al (2017)
Quantitative	Sutherland et al (2013)
Qualitative	Ivery et al(2017)
Quantitative	Baker et al(2016)
Quantitative	Dodani, Arora&Kraemer (2014)
Quantitative	Sarmugam, Worsley&Wang (2013)
Quantitative	Ronquest-Ross, Vink&Sigge (2015)
Quantitative	Tamaki et al (2004)
Quantitative	Schwalm et al (2018)
Quantitative	Lamptey et al (2017)

1. Mass media campaign to reduce salt consumption

Some studies report an increasing awareness for the need to reduce salt consumption after receiving knowledge through salt reducing campaign. Campaign intervention by advertisement in radio and television significantly help improving knowledge, attitude or belief and behaviour change in population levels to determine step for considering and starting to limit salt consumption [20]. Movement that the community did in order to participate in salt consumption limitation implemented by reducing

additional salt and monosodium glutamate-based flavoring for cooking and changing their habit on placing table salt when eating, while the use of herbs and spices for cooking is significantly higher [16], [17], [19]. Besides, campaign could help the community suppress their habit to consume processed foods and beverages such as soda, sauces, dressing and cooking spices, sweet and savory snacks [13], [19].

Knowledgeable community after exposed by mass media campaign about salt limitation shows good health outcomes or not experiencing hypertension [19]. After exposed by campaign activity [20], 75.5% people with hypertension can explain that high consumption of salt is adversing healthiness and linked to hypertension diseases (75%). High-Risk and Population Strategy for Occupational Health Promotion (HIPOP-OHP) research shows that there is a significant correlation between changing stages for reported behaviour of salt diet with urine sodium excretion [20]. Those who gained information through advertisement in pre-contemplation stage have a higher salt consumption compared to those who are classified into the next stages [18]. This shows that mass media campaign could be an effective tool to utilize as part of strategy to reduce salt consumption in population along with other methods.

2. Hypertension workshop program through social activity or volunteering in health sectors

The implementation of hypertension workshop program is not specifically referred for people with hypertension only.This workshop could be given to social activist or volunteers involved in health sectors. Optimizing social workers or community health volunteers is done to provide health needs of villagers or low income communities who get less health care [1], [10]. Workshop packages received by volunteers are 1) introduction about importance of knowledge about non communicable diseases such hypertension, 2) identifying risk population by using a list that consists of salt consumption, sedentary activity, smoking behaviour and alcohol consumption, 3) blood pressure test done by digital electronic tension meter and body weight measurement, 4) health education about main risk factors, and 5) records, reports and follow-up [10].

Workshop for social activist about effective prevention of hypertension is able to improve participants' knowledge from their prior stage [1]. This knowledge improvement can be maintained for about 6 months [1]. After good improvement achievement in knowledge, they can facilitate and manage a meeting with the community [1], [11]. Trained volunteers will visit houses then provide counseling [11]. In the meeting, they also can get involved directly in measuring body weight and blood pressure followed by explanation about hypertension based on hand-out given in advance [1], [11]. When finding people with hypertension, volunteers will ask patients to visit health facilities for further diagnosis and medication. After that, volunteers monitor the patients about their obedience in medication based on advices and suggestions of nurses [11].

Through training or workshop, social activists involved in health sectors found that they have better understanding about hypertension that help them in discussing about risk factors for cardiovascular diseases and healthy life style adoption to the community [1]. In addition to educating community, most of them use their current knowledge from training to educate their own family, neighbor and friends. Challenge for them in the case of spreading information about risk factors of cardiovascular diseases and adopting healthy life style is the low response of community members especially housewives and farmers for their reason that they have not enough time to attend group discussion meeting [11].

Some of people in the community also complain about transportation expense to attend the meeting. Most of personnel complain about incentives that is unregularly received. Thus, they expect to be part of the health system and accept salary. The weakness of this program is the lack of assistance and monitoring from health system management. It is important for volunteers in the health system to have determined a job description, good supervision and proper remuneration. They also should obtain training or workshop and re-training regularly then being evaluated and supported by proper supervision [1].

3. Education in group for people with hypertension about DASH and lifestyle

The National Heart, Lung, and Blood Institute (NHLBI) have identified DASH as simple life modification to change eating pattern at the same time at the same time it is also very effective to control and reduce high blood pressure in just 14 days [2], [6]. Diet and life style approaches to stop hypertension have been tested scientifically through the study from Dodani, Arora, Kraemer (2014) which found significant reduction systolic blood pressure from baseline as much as 22 mmHg and 6,5 mmHg for diastolic blood pressure. Furthermore, there was also body weight reducement as much as 3,11 kg [2].

Diet approach to stop hypertension through DASH diet is supported by NationalInstitutes of Health (NIH). DASH diet is an eating pattern which is based on DASH's eating portion and choices. DASH focuses on fresh vegetables and fruits, grains, processed foods or low fat milk or no fat milk, fatless meat and healthy fats. DASH is emphasized to reduce unhealthy fats, processed sugar, sweets and salts [5]. Participants that get some education about DASH feels that powerpoint presentation or any other audio visual media are very useful to help them acquire good information. They can see the media concurrently provided by the facilitators for information [5]. An effective DASH education intervention for community of people with hypertension is given according to the culture and environment changing to increase community access towards fruits and vegetables, low fat foods and low sodium foods. As a result of their frequent gardening, it is more possible for them to consume more local vegetables, fruits or any other local foods. Otherwise, they will be less consuming processed foods or fast foods [2].

In addition to control and reduce blood pressure, group-based education for people with hypertension about DASH also succeeds in lowering obesity and overweight prevalence. Respondents with high participation are

reported to consume more vegetables and fruits in a day, lessen their salt consumption and spice their vegetables with less fat compared to those who did not participate in the education activity [2]. The participants did an effort of DASH diet awareness and shared information with other family members. Participants were aware that spreading information from mouth to mouth and explaining brochures about DASH are the best way to promote it to families, friends and their praying sites [5].

4. Comprehensive prevention and management program for hypertension

It is started by evidence-based intervention development and the utilization of basic surveys (population, patients, facilities and provider). Health promotion program interventions to improve awareness about risk factors are designed to be delivered by trained health officers according to the development of risk factor for hypertension and diabetes in intervened rural areas / cities. Meanwhile, facilities surveys and providers become the basis to design training program for health service providers as well as to advocate access improvement to health system. In addition, the findings from patients survey become the basis of health workers 'trainings focus in building self-management skills of hypertension/diabetic patients and patient networking [8].

Intervention domain of comprehensive prevention and management program consists of 1) capacity development through short training activities, long distance learning followed by task diversion efficiently performed by non-physicians health workers to prevent hypertension primary detection referring to screening through screening and health promotion adjusted to local cultures, risk factor documentary, counselling and community-based education towards cardio vascular disease (CVD) risk factors and healthy lifestyle as well as reinforcement of medication obedience and reminders through short message services (SMS) or voice message (VN) and electronic data collection through tablet-based survey, 2) primary diagnosis and complication avoidance by 10.000 patients as target, 3) management of anti-hypertension and free cholesterol medication combinations, 4) nursing monitoring for blood pressure, 5) electronic data system (m-health) for adults population, 6) telemedicine consultation by CVD nurses with the physicians and referring patients with severe hypertension or organ destructions to the physicians, 7) advocate improvement of services access, 8) education and patient networking adjusted to cultures to improve self care [15], [7].

Through comprehensive prevention and management program, we can apply multicomponent, multilevel, financially efficient collaboration to improve concurrently with hypertension preventive behaviours, detection and management [9]. The study result of Lamptey et al (2017) found that high hypertension in population coupled with the relatively high awareness but very low self care and control for their hypertension, requiring deeper investigation about barriers towards care and control [7]. Although receiving intervention, the low self-care and control caused by suggestive may cause the health service delivery strategy does not significantly make impact. It can be said that behaviours or attitude is as important as access. The lack of deep knowledge about hypertension risk factors and the high of risk factors for biologic hypertension particularly obesity would be a significant issue in goal achievement. Through comprehensive intervention, we can improve community general knowledge about hypertension and diabetesPatients learn to gain self-management skills and use management-based guideline by providing the access to the health services that will elevate the results and health information of chronic care model development [8].

Discussion

By the increasing health demands in the community related to catastrophic diseases, particularly cardiovascular diseases as the main cause of death which are caused by hypertension, so that health services need to make some efforts to accomplish the demand. In order to prevent and manage hypertension, this systematic review shows that health services and nursing quality improvement through community-based education could improve self-awareness towards necessity to reduce salt consumption [19], improve volunteers knowledge which allows them to facilitate and manage a meeting with the community for hypertension prevention efforts implementation [1], directly control and reduce blood pressure and overweight/obesity prevalence [2], [5], and could apply multicomponent, multilevel, financially efficient collaboration in concurrently improve prevention, detection and management behaviours of hypertension [8].

In the reality, even though our community in Indonesia is television appreciators, until today, advertisements that campaign salt consumption reduction have not been seen or heard yet neither in radios nor televisions. Advertisement in Indonesia deliver more about foods. This is similar to other countries, like what have been presented by Wentzel-Viljoen et al (2017) [19]. Result of the study proves a significant relationship significant relationship between changing stage for salt consumption and diet behaviour which is reported with sodium urin exertion [18] which become our basis to campaign salt consumption limitation through radios and televisions, both local and national ones.

Our community sometimes does not really understand about products that contain of of high salt and monosodium. Thus, when cooking, they they are not using them are not using salt completely but those cooking spicy products which contain contained of high salt and monosodium. This phenomenon is not only found in Java island in Java Island (Sumedang Regency), but also in the east parts of Indonesia which are Maluku in Leihutu Regency. This is the reason for necessity of campaign in mass media to change community habits of salt consumption. This campaign aims to limit the habit of adding salt and monosodium glutamate-based flavoring when cooking as well as change a habit of providing table salt when eating and encourage the usage of herbs spices more in cooking [16], [17], [19].

Mass media campaign could be an effective tool to be used as part of strategies towards reduction of salt consumption among population along with other methods. Community-based education method for social activist or volunteers in health sections and direct education to the community about DASH and lifestyle could prevent complication risks or people with hypertension fall into some worse condition. Training or workshop for volunteers could be directly beneficial for the volunteers themselves to prevent hypertension so that this knowledge improvement made the activists or volunteers able to facilitate and manage discussion with the community and provide explanation about hypertension according to the handout given in advance about risk factors as well as giving counseling for their own families and neighbours [1], [10].

Barriers in implementation of education through volunteering in health sectors is the difficulty to find the social activist/ volunteers in health sectors or commonly called as heath cadet. Since these social activists/volunteers in health sectors do not accept proper incentives [1]. Involvement of social workers team in health sector can not completely trusted to check blood pressure except by supervision or calibration from health service officers. Volunteers in health sectors are only allowed to to measure body weight and body mass index identification. Thus, groundbreaking is needed to leverage every available every available resource such as taking advantages of nursing students' presence. As a result, this inhibition could be minimized where students will be the replacement or substitute of these social activists/volunteers and cooperate with stakeholders in the community to identify health problems.

Volunteers in health sectors whose roles were given to the students are much more trusted by the community. Students' ability to applicate their knowledge from college and DASH training as well as lifestyle would be more presentative so that it will be easier to be understood and imitated by the patients, family and the community. Nursing students are expected to be more involved in helping participants when determining smart visionary and supervising their plan of actions. DASH education intervention and lifestyle in the community of hypertension patients will be more effective when given according to cultures and environmental changing [2].

When behaviour of the community about DASH diet and self-management are done regularly for 14 days, it's effective to control and reduce high blood pressure [2], [5]. Indonesia is a cultural prosperous country. Therefore, to gain optimum result in the implementation of DASH education intervention and lifestyle, it needs to be adjusted to local culture of each region. This review shows that all education and preventive program as well as management program of hypertension are successful, they adjust to social culture values and factors related to hypertension prevalence in a region.

Comprehensive preventive and management program is started by by evidence based on interventions development and usage of fundamental survey results (population, patient, facility and provider). Comprehensive interventions results in better outcomes for patients, community awareness and knowledge about hypertension, practice provider knowledge, expense effectivity program of patients and the community, and access to healthcare system. Comprehensive preventive and management program does not only affect results but also give information for chronic disease care model.

Comprehensive preventive and management program model would be better if collaborated with health education institution in each region so that it would be easier in assisting basic information gathering as well as optimal intervention implementation. Institution of education as a place that would produce professional nurses in the future needs to emphasize that students need to assess possibility to fulfill community demand according to resources provided among themselves [9]. Fulfilling community demand by community nurses can be done by utilizing resources through partnership with the government so that all involved students may get their salary as health volunteers especially those who work for uncommunicable diseases. This is as a motivation for them to give information about hypertension in every village's discussion or scheduled meeting. Health social activists or volunteers that comes from local students have basically uniformed level of knowledge thus made them able to job diversion supported by health system that operated by gadget.

Volunteers made some efficient efforts to detect hypertension, document risk factors, lifestyle counselling and encourage patients obedience towards prescribed medications. Like most of countries, Indonesia only allows licensed physicians to give prescriptions. Therefore, approaches that are not in comprehensive intervention is mixed interventions where nurses identify individuals with hypertension and physicians prescribe their therapy according to hypertension guidelines made by WHO. Challenge in comprehensive intervention is in certain regions that doesn't have proper physician, relevant management towards community demand is needed. Based on experience that anti-hypertension therapy initiation is inhibited because of doubt to determine that possibility of increasing blood pressure after measurement, a research with simplified comprehensive integrated approaches is started by by anti-hypertension medication with only 1 or 2 blood pressure measurement while taking steps to decrease lipid and modification other risk factors. It can reduce CVD risk for those in high risk group.

Summary

This systematic review emphasizes that that community-based health education among people with hypertension is an effort to help hypertension control program. There are four kinds of community-based health education program, which are mass media campaign for salt consumption limitation, hypertension control training or workshop for social activists or volunteers in health sectors, group education about DASH and lifestyle as well as comprehensive prevention and management for hypertension. Effective preventive program implementation and management for hypertension is started by initial data assessment related to population and factors connected to to incidents in a region. By implementation plan arrangement,

those efforts should be made based on from local cultures. Community based health education approach through these 4 interventions could be used for uncontrolled hypertension in the community. The implementation of these community-based health education interventions may apply multicomponent, multilevel, efficient financially collaboration in order to improve concurrently preventive behavior, primarily detection and may encourage diet behavior and decrease blood pressure BMI.

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