



Qualitative Study: Knowledge, Behavior and Risk Factor of Hypertension Community Living in Kwitang, Central Jakarta

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Abstract

Hypertension is a complex, multifactorial, and multisystem health disorder that is influenced by various elements, one of which is air pollution. Central Jakarta is one of the regions with the highest cases of hypertension in Indonesia, with the prevalence of hypertension based on direct measurement is 39.05%. Kwitang village, Central Jakarta is the area who had major cases with 55.3%. The purpose of this research is to explore knowledge, behavior, and risk factors of hypertension community living in Kwitang village, Central Jakarta, as well as hypertension prevention programs there. This research was being held on May 2023, using qualitative method by collecting data through deeply interviews with eight woman of hypertension patient on their productive age (18-55 age years). Supporting participants were also being involved in this research for the triangulation process, that was supervisor of non-communicable disease programs and supervisor of environmental health program at Kwitang public health center. Collected data then be analyzed with content analysis techniques. The result showed that participants knowledge of their own illness (cause, effect, prevention) were good enough, but health behavior to prevent the disease were still limited. It shows from there were so many risk factors experienced by the participants. Knowledge supports were being needed, in educational form from public health center.

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Introduction

Hypertension is one of the most prominent risk factors towards cardiovascular disease incident (Yusuf et al., 2004). Hypertension is either one of quite crucial medical condition that would affect the risk heart, brain, kidney and any other disease. Approximately 1,13 trillion of world population is suffering from hypertension where most of them lived in the lower middle-income countries. In 2015, one of four men and one of five women has been suffering hypertension. Hypertension also be the part of early death main reasons in the world (WHO, 2021).

Hypertension health problems is complex, multifactorial, and multisystem where high blood pressure is being impacted on various elements, there are genetic, environment, anatomy, adaptive, nerves, endocrine, humoral, and hemodynamic factor (Oparil et al., 2018). Air pollution as one of

environmental factors could impact the occurrence of hypertension, which previous research informing there were a relationship between short term exposure and long-term exposure of air pollution to the occurrence of hypertension (Curto et al., 2019).

In Indonesia, hypertension become noncommunicable diseases (NCDs), which cause highly attention. The result of Basic Health Survey (Riskesmas) 2018 showed hypertension prevalence in Indonesia on age ≥ 18 based on doctor diagnosis is 8.4%, while the prevalence based on direct measurement is 34.1%. One of province in Indonesia with the prevalence of hypertension over the national prevalence is Special Capital Region of Jakarta province. Hypertension prevalence in Special Capital Region of Jakarta province based on doctor diagnosis is 10.17%, while city with the highest prevalence of hypertension is Central Jakarta about 12.16% based on doctor diagnosis, and about 39.05% based on direct measurement while survey. With totals 7,383 of household members on Basic Health Survey in 2018, results obtained hypertension percentation in Central Jakarta based on doctor diagnosis that women is higher than men (12.57% compared to 7.76% (Riskesmas, 2018). Based on hypertension case report which comes from Central Jakarta health division, Kwitang village is one of the regions in Central Jakarta that has the highest cases of hypertension, about 55.3% (up to 1,001 cases of the total target 1,810 people).

In order to NCDs management particularly hypertension, Indonesian government had operated few programs, among them NCDs direction based on community via *Pos Pembinaan Terpadu* (Posbindu) NCDs. Posbindu NCDs is the form of community participation in order to manage the risk factor independently and continuous that being held integrated, routine, and periodic. The implementation of Posbindu NCDs is being held by health cadres in each region that being trained specifically (Kemenkes RI, 2012). Another government program is contained in Health Minister Regulations Republic of Indonesia number 39-year 2016 regarding maintenance guidelines of Healthy Indonesia Program (PIS PK) with family approach. In that program, hypertension is one of the main noncommunicable diseases that being concern and required to be controlled (Kemenkes RI, 2016). Family approach is absolute, that should be done if the management of hypertension want to be succeeded. At the provincial level, Special Capital Region of Jakarta local government on Jakarta Governor Legalizations number 25-year 2021 was controlling with regard to NCDs type, one of it is hypertension is becoming one of main NCDs that is required to be implemented with countermeasures by Health Division and community through public health efforts and individual health efforts (Gubernur DKI Jakarta, 2021).

Increasing high blood pressure or hypertension might occur due medical condition such as history of diabetes; unhealthy lifestyle such as excess sodium consumption, less physical activity, obesity, smoking behavior, and consuming alcohol (CDC, 2021). Close family history that been suffering hypertension, potentially increasing the risk of essential hypertension (Kemenkes.RI, 2014). Various research proved that factor of lifestyle would increase the risk of hypertension. Someone who had less activity has a risk of escalating high blood pressure or hypertension because of intensify the risk to appear (Ahmad Aswal Liambo, 2018; Nuraini, 2015).

Many of previous research regarding the risk of hypertension is including age, education level, professions, family hypertension history, noncommunicable disease history, smoking behavior, consuming alcohol, consumption of vegetables and fruits, and sleeping quality (Anggraeny & Martini, 2020; Babisch et al., 2014; Honda et al., 2018; C. Li & Shang, 2021; N. Li et al., 2019; Lin et al., 2017; Maulidina et al., 2019; Salean & Djaja, 2021; Utami, 2020). Environmental factor such as air pollution would also affect hypertension occurred, where based on previous research informing there are a relationship between short- term exposure and long-term exposure of air pollution to the occurrence of hypertension (Curto et al., 2019).

Public education potentially be the influential factor of the occurrence of hypertension, which with the hypertension knowledge owned by the sufferer could perform step by step the prevention against hypertension on their own body (Yulidar et al., 2023). Hypertension sufferer awareness regarding the disease on their body is the main key of medication adherence (Wolde Id et al., 2022). Hypertension patient that has well knowledge related to hypertension has a good correlation with the medication adherence that could supporting the control of blood pressure (Magadza et al., 2009). Along with various government running program that being implemented by health center as the front line in providing health treatment to public, therefore health workers have a significant role involving the succeeded of the programs. High cases of hypertension on Central Jakarta society, particularly in Kwitang village, it attracts the researchers to study deeply concerning knowledge, behavior, and risk factor of hypertension sufferers.

The purpose of this research is to discover knowledges, behaviors, and risk factors that being suffered by the hypertensive community living in Kwitang sub-district, Central Jakarta along with hypertension hypertension prevention programs in that region.

Methods

This research used qualitative study method with phenomenology approach. Phenomenology approach researching the experiences of someone is universal against a phenomenon that being experienced on daily life (Afiyanti & Imami Nur Rachmawati, 2014). This study was learning about perception, knowledge, what hypertension participant felt, and the program that already running in regional area. Participants in this research were productive age women that has been fulfilled research criteria. As for inclusion criteria participations in this research was the productive age woman (18-55 years) that being suffered from hypertension who domiciled and native people in Kwitang village, Senen, Central Jakarta, willing to be a participant of research, capable to well communicate where the participants be able to telling their experiences along with hypertension properly and what they knew regarding hypertension.

In selecting participant, the researcher assisted by local community leaders, namely RW leaders and local cadre. At the early stage, we create the list name of community which suffering hypertension based on blood pressure direct measurement via *Pos Pembinaan Terpadu* (Posbindu) activity for the last 1 month. From the list of names obtained, the researchers were made a participant election based on inclusion criteria, which result as many as 8 people. The interview was being held with agreed appropriated time and participants are being gathered in local community leader's citizen hall, that later being interviewed. Supporting participant are also being included for triangulation process, which is supervisor of counter measurement program regarding noncommunicable diseases (NCDs) who had a duty to providing public health services regarding NCDs particularly hypertension in Kwitang village public health center.

Data collection carried out through deeply structured interviews with the woman sufferer participant in productive age (18-55 years) by using tools likely interview guidance, notebooks, and voice recorder tool. Interviews conducted in May 2023. Collected verbal description data of participant by a voice recorder tool later be listened and be made in the form of verbatim transcripts, which were make a transcript as similar as the informant said, without addition, change, and refinement of interview result (Martha & Kresno, 2017). Transcripts result later be read and understood repeatedly and thoroughly that later be created matrix and carried out grouping based on data corresponding with many sub-topics or theme which already determined. The result of matrix and grouping later performed data analysts with content analysis technique. Data analysts be performed based on theme that has been arranged and guided in the research purpose for later displayed systematically in the form of information that easily be read and understood (Martha & Kresno, 2017).

Results

Participant Characteristic

About eight productive age women who suffering hypertension were consolidated as participant in the interview which could be seen in the following table

Table 1.
Characteristic of hypertension participant in Kwitang sub-district, Central Jakarta

Partisipant	Age (year)	Last Education	Occupation	Ethnic Group	Duration of Stay (year)	Duration of Hypertension
P1	48	SMA	Not working	Padang	28	28 tahun
P2	53	SMA	LMK Leader*	Sunda	48	44 tahun
P3	48	SMP	Not working	Jawa	44	18 tahun
P4	45	SMP	Not working	Sunda	23	5 tahun
P5	39	S1	Not working	Betawi	39	1 tahun

2023

P6	49	SD	Not working	Sunda	47	14 tahun
P7	25	SD	Washing Worker	Betawi	25	43 tahun
P8	44	SD	Boarding Housekeeper	Jawa	12	1 bulan

*Sub district Council of Kwitang

Participant who had involved in this research are within the age range 25-23 years old and had been lived over five years in Kwitang village, Central Jakarta. Most of the participants was a housewife which do not work (around five people) with different ethnic groups. The majority last education of participants is finishing school education and one person with higher education. Regarding hypertension disease, most of participants had been diagnosed hypertension for years.

Then we carried out triangulation within two health workers in Kwitang public health center i.e., NCDs program supervisor who are responsible towards implementation of NCDs programs on public particularly hypertension. Environmental health sanitarians also be interviewed regarding air pollution program that had been run by public health center. Both education was diploma with each of age 30 and 52 years old. The working period of NCDs program is within three years and Environmental health program supervisor within four years. Environmental health

Initial Overview of Diagnosed Hypertension

Based on characteristic data, most of participants had known that they were suffering hypertension since a long time. The beginning diagnosed with hypertension could be known by indication and symptom that been felt or known while been checking into the nearest health facility. Mainly participant undergone hypertension symptoms with the most common symptoms there are had a dizzy on their head, heavy head as it being stabbed. Most common symptoms are dizzy on their head as what the participant felt below.

".....I was on my 20 when I had frequently dizzy on my head. I thought it was just something as usual, and then I just drank a medicine after that, but it turns out my hypertension is keep increasing" (P1, 48 Years old)

"Just a headache nothing more than that."" When I burned out, yeah, I already knew it was exactly the time when it is getting high" (P2, 48 Years old)

About two participants had diagnosed hypertension when they were getting the second and third pregnant in the age over 30. During pregnancy they did not feel any of hypertension symptoms. However, when the pregnancy examination was eight months old, it was diagnosed with hypertension as in the following participants.

"When I was pregnant" "When I was pregnant, right. It's been 8 month I was getting controlled. Ma'am why the blood pressure was so high, 200/100 they said" "I know nothing about getting high blood pressure" (P3, 53 Years old)

One participant stated that she had not known that she had been diagnosed with hypertension for a long time, namely when she was pregnant with his third child in 2022. The participant was diagnosed with hypertension during a pregnancy examination at 6 months of gestation, so the baby had to be born prematurely at 31 weeks, and the mother became blind after giving birth

"Hmm, it is not a quite long time. So, when I was getting the third child pregnant, I was checking for 6 months of pregnant if I'm not mistaken" "When I were getting checked I was being asked, but then I'm getting blood pressure because of 160 or 180, uh 160" "The birth is premature...yes, I'm getting sightless" "Up to 200 if I'm not mistaken" "Apparently I'm getting high blood pressure since then, the time when I was getting third child pregnant" (P5, 39 Years old)

Beside hypertension symptoms, participants were getting blood pressure into medical facility, such as public health center, hospital, midwife practice, as well as in Posbindu activity. One participant stated that she had her own blood pressure monitor at home.

"Went to the doctor" "I used to get checked at public health center if I'm not mistaken, in Kwitang" "Yes, that was it, high blood pressure" (P7, 44 Years old)

"In Kwitang public health center. At first is from public health center, but then I was referred and getting medicines from hospital until now" (P1, 48 Years old)

"There is Posbindu right here" "Eventually, sometimes I went there within 2 weeks, just so I knew hypertension, well, long time I had my own monitor, to checking on my house" (P2, 48 Years old)

Knowledge about Hypertension

Participants hypertension knowledge against the disease that being suffered basically could be obtained from various sources such as family, friends, education, mass media and health counseling

activities from local health workers (Setiono, 2010). In this research, knowledge was obtained by participants from Posbindu activities or during visits to the Kwitang Public Health Center. Health knowledge about hypertension includes the causes of hypertension, the dangers or effects of hypertension, and prevention of hypertension. The results of in-depth interviews with eight participants regarding the causes of hypertension, there were various participants' answers regarding the causes of hypertension with majority due to behavioral factors such as consumption of foods containing salt or coconut milk, lack of rest, lots of thoughts, rarely exercise, fatigue, the body is not fit. The results of the interviews are proven below.

"I think it because thoughts, that's what I knew" (P3, 53 Years old)

"As far as I knew, when I'm getting underwhelmed or what It is, I think it because too many thoughts" (P7 Years old)

The other most answered cause of hypertension mentioned it because excessive consuming foods contained salt (salty).

" They said too much consuming salt" (P5, 39 Years old)

"Well, i'm confused where it came from, it could be food, right. My doctor said, ma'am please reduce something salt, you know sometime I like salt" (P1, Years old)

There was a participant who answered that hypertension was caused by heredity and there was other participant who did not know the cause of hypertension at all.

"Hmm, yes, I am a hereditary factor maybe " (P5, 39 tahun)

Furthermore, participants' knowledge was explored regarding the dangers of the disease and the prevention that could be done. Generally, participants already had good knowledge regarding the dangers or effects of hypertension. All participants stated that hypertension is a dangerous disease for various reasons, which is it can cause strokes, heart attacks, falls in the bathroom, and is dangerous if it left untreated. The results of the interviews are proven as follows.

"Actually, it was dangerous doctor said, ma'am if it is not being cured it will getting worse into stroke. Is that true?" (P1, 48 Years old)

"Dangerous" "The danger could run worse into heart" (P2, 48 Years old)

"I think it's dangerous, the problem is if you had high blood pressure and you enter bathroom then slip in it, it will be fatal" (P3, 53 Years old)

"If you say it's dangerous, it really is. Because if it left untreated, I felt I cannot do anything" (P4, 45 Years old)

Exploration of participant knowledge was then carried out regarding the knowledge possessed whether hypertension could be prevented and how prevention efforts could be made. All participants answered that hypertension can be prevented, with various answers, namely hypertension can be prevented with a good lifestyle, do not think too much if there is a problem, routinely check blood pressure to the health center, eat lots of fruits, take medication continuously, drink star fruit juice and celery, and routine consumption of vitamins.

"Taking medicine, taking medicine every day. We cannot stop, isn't it" "Yeah, I think drinking various of juice such as starfruit, celery, cucumber" (P5, 39 Years old)

"Many people said, it could be this way, drinking juice or a food that could heal this" (P7, 44 Years old)

"Uuh, it's possible if they had a good lifestyle. Then if you have a problem, don't think about it too much, that's the cause either. Then exercising, right? Exercising" (P2, 48 Years old)

The researcher tried to triangulate with the health center staff responsible for the NCD program at the Kwitang Village Health Center. The results of the interviews stated that the NCD activities that had been carried out by the public health center such as hypertension and sugar screening. Routine activities, namely posbindu every once a month and the Chronic Disease Management Program (Prolanis) once every six months. The public health center also cooperates with the Prodia laboratory to check blood in patients with hypertension and diabetes mellitus.

"If we had NCD for screening, hypertension screening, sugar screening is what we do. But then there is a posbindu activities, from sort of pronalis." (Key informant 1, 30 Years old)

"Ow posbindu is every month, correct every month. If prolanis hmm because of it is the cooperation with prodia, so it is every 6 months" (Informan 1, 30 Years old)

For coaching related to hypertension there is a specific class but only for cadres in the form of outreach activities by doctors at the public health center, regarding to hypertension and its risk factors for counselling related to hypertension to the public that is only carried out during posbindu activities. Screening and providing referrals for people who experienced high blood pressure are carried out only in posbindu activities, but those who have never attended posbindu are not netted. Key informants did not

really understand what a risk factor for hypertension was, when asked the answer was the dangers of hypertension.

"There is. There is a class if it is. So, there is a counselling, then the doctor explained regarding prevention, such as like that, we usually prioritize the cadre first" "Later if the cadre done, we bring it to public, but we go down to the field at posbindu, so just do counselling" (Key informant 1, 30 Years old)

Knowledge about Air Pollution

Knowledge about air pollution in this study was conducted to explore participants' knowledge regarding the definition of air pollution, the definition of particulate matter (PM_{2.5}) and its dangers. The results of in-depth interviews showed that most of the participants had never heard of the term air pollution. One participant can answer close enough, namely participants with the last undergraduate education.

"Air pollution, I was, exhaust fumes, yeah dusts, what again? Yeah, that's it" (P5, 39 Years old)

Two of participants did not know anything, whilst the other five people answered that they were hearing about air pollution but with an incorrect answer.

"I was, as if air pollution, because of eugh what is the name, some sort of TBC through birds. Then Droplet COVID yesterday, that is also including air pollution" (P2, 48 Years old)

"I was, I was, firstly, people throw the rubbish. After that what is it? which the drain water was clogged, that's what I knew" (P3, 53 Years old)

Furthermore, participant be explored regarding one of air pollution which is particulate matter 2.5 microns (PM_{2,5}). Whole participants answered that they never heard PM_{2,5} term and the risk.

"Barely know" (P6, 49 Years old)

"Never heard of" (P8, 25 Years old)

"Don't know" (P4, 45 Years old)

The researchers conducted a triangulation with the health center staff responsible for the environmental health program at the Kwitang Village Health Center. The results of the interviews stated that the programs that were already running included Environmental Health Inspections (IKL) of public places, places of worship, schools, hotels and markets. The activities for public, which is the construction of healthy homes. There has never been any coaching and education regarding air pollution problems in the Kwitang Village.

"We had IKL public places, worship place, school, hotel, market, that is TTU okay. If inside the building there is polyclinic, there is a counselling, the environment-based disease is just diarrhea" (Key Informant 2, 52 Years old)

"There is also available for family, regarding building healthy homes" (Key Informant 2, 52 Years old)

"We don't have specific air yet, for the air. We didn't have air pollution on sub-district level yet. There is just some sort of lightnings on public health center" (Key Informant 2, 52 Years old)

Patient's Behavior

The behavior of suffering from hypertension explored in this study is related to the frequency of participants attending posbindu activities in their area and adherence to taking hypertension medication. This behavior is included in the sick role behavior where sick people (patients) had a role that includes the rights of sick people or obligations as sick people, including actions to obtain healing, know or find out the facilities or appropriate service/healing facilities. The results of the interviews showed that most of the participants routinely attended posbindu activities which were held once a month.

"Routine every month, if my in-laws didn't go, I'll even invite them" (P4, 45 Years old)

"Routine" (P8, 25 Years old)

"I like to come, every month" (P3, 53 Years old)

The routine attendance of respondents was due to wanting to know their respective blood pressure. Particularly the participants also knew the results of blood pressure during posbindu activities in the last month.

"Yesterday, 140/100" (P1, 48 Years old)

"150, I forgot the ratio, around 110 or 121 I guess. As I remember the ratio is high" (P5, 39 Years old)

"Yesterday is 170/100" (P3, 53 Years old)

The other behavior of participants is regarding adherence to taking hypertension medicine, where by five people was consuming the medicine but just three participants who was consuming medicine once a day routinely, and the other two participants not routinely.

".... Since I had hypertension and high cholesterol. That's why I never stop consuming medicine" (P1, 48 Years old)

".... I definitely, once a month. Because the medicine was given once a month. For 1 month hypertension" "Amoldiphine 10 ml and another is arseton if I'm not mistaken" (P2, 48 Years old)

".....I got caught for never taking a medicine. I rarely went to Cipto for control because I was feeling Indolent. Ma'am you've got high blood pressure, must be you never taking medicine, isn't it? No, I said. Public health center gave me amoldiphine 10 ml" (P5, 39 Years old)

Other participants only took over-the-counter medication to relieve symptoms of hypertension, or only consumed fruit juice. Participants who did not take hypertension medication reasoned that they did not like taking medication.

"After that I drink, starfruit juice, with a blood-lowering drug which is I forgot what is the name" "I want to be honest; I don't like taking medicine. I don't like taking medicine since a long time when I was a teenager" (P3, 53 Years old)

"Occasionally I'm taking paramex" "I was, with doctor, I forgot who he is, in public health center, ma'am this is vitamin, this is high blood pressure medicine, this is headache medicine" "I just take medicine once, when I feel better, it's done" (P6, 49 Years old)

Risk Factor of Hypertension

The risk factors of hypertension were divided into two parts, namely factors that cannot be changed and those that can be changed. The irreversible risk factors for hypertension in this study were family history and co-morbidities. As many as three participants had a history of hypertension in their parents, while the rest had no family history of hypertension.

" Back in the day, before my father and my mother died. That's why currently my child also got hypertension" (P1, 48 Years old)

"I think my parent, my father frequently getting high blood pressure here" (P7, 44 Years old)

"It just because descendants, my mother had high blood pressure" (P5, 39 Years old)

Medical condition would also trigger hypertension risk. Almost all participants had another co-morbidities disease there were diabetes, heart, cholesterol, heart attack, and obesity.

".... My chest hurt when I'm getting this" "not getting tight feeling, but the pain felt like getting stabbed so many time" (P8, 25 Years old)

"Felt like soaked lungs? Yes i felt that. Then because the lungs getting soaked constriction of the heart occurs, that's it" (P5, 29 Years old)

".... Hypertension, heart, cholesterol. I was getting diabetes that time, 136 is counted high" (P1, 48 Years old)

Modifiable risk factors for hypertension are related to behavioral factors including smoking behavior, alcohol consumption, sleep quality, physical activity and vegetable along fruit consumption. Some of the participants had smoked and some were still smoking to this day. One participant mentioned that smoking could be a sedative when you are depressed.

"I was smoking when I was young" "I think it's around 18 years old, I already entered high school" "Currently sometimes" "So, if medicines ran out, I will be depressed, then I will smoke, it just felt better. Finally, I be able to sleep after that" (P4, 45 Years old)

"Sometimes when I gathered with my friends, I still smoke one to two sticks. I used to get three packs a day" (P2, 48 Years old)

For alcohol consumption, particularly participant had never consumed alcohol beverages, only three participants was consuming alcohol.

"Honestly, I was, when I was still working, but then I just stopped (respondents lowered their voices when answering)" (P1, 48 Years old)

"No. Oh long long time ago. Ah now I was not." (P2, 48 years old)

Regarding sleep quality, some participants mentioned they never had sleep disorder, but as much three participants answered they felt sleep disorder such as, insomnia too much thoughts, and dizzy that being caused of awake at night.

" I frequently sleeping with a sort of insomnia, I guess. When it's already over 12 o'clock, my eyes start rising again. But when it comes under 12 o'clock, I would sleep" (P2, 48 Years old)

"I am the type of sleepless person, especially as a housewife, I had a child that just graduated still not get a job, their brother also, these always on my mind" (P3, 53 Years old).

"If it felt like dizzy, I am not, it just like, you know, my oldest child frequently getting home uncertain, that's it" (P4, 45 Years old)

The participant's physical activity was still relatively light and heavy, because most of them were housewives who spent a lot of time on daily household activities.

"... I take care of my mother everyday; my mother is elderly by now. One child, me even with grandchildren." (P1, 48 Years old)

"In the morning, after prayed subh, I immediately bathe the young child, after took my young child to school, I went home to taken care of the second child for college" "Then I'll pick them up at 10 for tutoring, took a short break to watch YouTube, pick them up again and went home, that's it." (P4, 45 Years old)

For consumption of vegetables and fruit, some of the participants only consumed vegetables regularly, and about two people consumed vegetables and fruit regularly.

"I rarely consumed fruit, but sometimes I ate that. But I eat vegetables every day." ... "not really into it" (P7, 44 Years old)

"I ate vegetables, but rarely fruit" ... "Just as soon as I found it, If I do want to eat fruit, I will buy it if I didn't, I won't" (P5, 39 Years old)

"I frequently forgot about fruit, I eat vegetables, but not every day I guess" "I will make juice for fruit sometimes, but I rarely consumed veggie, not a daily routine" (P2, 48 Years old)

In exploring risk factors for hypertension, researchers also explored participant's perceptions about the dangers of smoking and the importance of consuming vegetables and fruit. Regarding smoking behavior, all participants answered that smoking was harmful

"Of course, it was dangerous" "The danger of lungs disease, many people said they will have felt tight on their chest" (P7 Years old)

"Uh very dangerous" ... "Sore chest, cough frequently" (P8, 25 Years old)

"Dangerous, my husband has had slit on his neck because of smoking, because thyroid" "Nowadays smell cigarettes is just not good for me" ... "Cigarettes are already bitter for me" (P2, 48 Years old)

Among all the participants, there was a person who thought that smoking was harmful but also brought benefits to her.

"If you say it's dangerous, yes, it called smoke. But think about it, it's beneficial for me. Because when I smoke a cigarette, my head felt like getting touched, so my brain becomes bright again. But if you're dizzy, no cigarettes already, it's wrong to sleep, it's wrong to want this and that" (P4, 45 Years old)

The perception of people with hypertension regarding the importance of consuming vegetables and fruit, all participants answered that consumption of vegetables and fruit is important for health, good for the skin, good for digestion, and to increase energy.

"It is so important actually, why I am not regularly eating? Hehehe. In sanity fruit and veggies are good for skin. " "If I felt stuffed, I continue (eating fruit), 'till I forgot that I still eat fruit" (P2, 48 Years old)

"That is good miss, for digestion defecation" (P6, 49 Years old)

"It's important for health as well. Mmm what was it, not letting our bodies be like that. Many people said eating vegetables to be healthy, then I also eat every fruit" (P1, 48 Years old)

Discussion

This study was conducted in women on productive age living in urban area, Kwitang sub-district, Central Jakarta City. The average age of participants was in forty years, it almost in the middle age of live. Majority of participants had low education, were graduated from elementary school, follow with graduated from junior high school. In general, risk of hypertension was higher in men than women, however in middle age and older, the incidence in women increases. It was happened because the incidence of stress in women increased, related with menopause period (Irianti et al, 2021). All of the participants have been living in Kwitang sub districts more than five years, which means there were expose from the same source of air pollution. Kwitang sub districts especially RW 2 and 5 located near the road and the main road that was Kwitang road (less than 500 meters). Previous study regarding exposure to ambient particulate matter air pollution, blood pressure and hypertension in China shows that exposure of long-term air pollutant (PM_{2.5} dan PM₁₀) relate with the increasing of hypertension prevalence in children and adolescents (Zhang et al., 2019). Length of participant living in study area along with length of suffered from hypertension.

In this study, we have highlighted the participant's experience about how they diagnosed with the disease, symptoms, and which selected health care facilities to check their blood pressure. Here in this study, several participants did not know suffered with hypertension until they experience the symptom including severe headache. After the symptom appear, participants then checked their blood pressure in the health care immediately. It was in line with other study that participant diagnosed by chance in a

hospital or primary health care (Boitchi et al., 2021). Researchers found that participants with hypertension asymptomatic in the early stages or have temporary symptoms, then mostly participants did not consider high blood pressure as a disease did not pay attention to it. These finding in line with previous study that high blood pressure was a silent disease and almost no obvious symptoms and serious complications in its early stages (Shamsi et al., 2017).

Most of participants only had their blood pressure assessed during visits to the doctors in primary health care on in “posbindu” events one e month. Only one of participants had her blood pressure set at home and use it regularly to monitor her blood pressure. Previous research in Malaysia found that patients who self-monitors their blood pressure were tends to be more involved in discussion about their blood pressure control (Abdullah & Othman, 2011). In Northeast Ethiopia, Participants having good knowledge about hypertension self-care were more likely to have blood pressure self-monitoring practice than participants having poor knowledge about hypertension self-care (Edmealem et al., 2023). Several participants diagnosed with hypertension during pregnancy when their had pregnancy checkup in health care facilities. That condition refers to pregnancy induced hypertension (PIH) that happened in a pregnant woman attending delivery service with high blood pressure ($\geq 140/90$ mmHg) after 28 weeks of gestation. Pregnancy induced hypertension diagnosed by a physician and it includes gestational hypertension, pre-eclampsia and eclampsia (Abera Gudeta & Mekonnen Regassa, 2018).

The first theme in this study was regarding knowledge of participants about hypertension. It was highlighted participant’s understanding of cause of the disease, disease effects, and disease prevention. Research finding show that most of participants comments that hypertension caused by modifiable risk factors such as eat too much salty food, fatigue, anxiety, physical inactivity, and unhealthy body. All of the comments describe by participants in the low and middle education. Another participant with higher education comments that hypertension happens caused by modifiable risk factor that is eat too much salty food and non-modifiable risk factor that is family history of hypertension. Knowledge was closely related to education, which participant in higher level of education achieved a higher level of knowledge as has been reported in other studies (Halgato et al., 2020). It was clear that cause of hypertension consists of modifiable risk factors include unhealthy diets (eat too much salt, diet high of saturated fat and trans fats, and low intake of fruits and vegetables), physical inactivity, tobacco and alcohol consumption, and being overweight or obese. Another was non-modifiable risk factors include family history of hypertension, age over 65 years and co existing disease such as diabetes or kidney disease (WHO, 2021).

Another exploration was regarding participant’s understanding about disease effect in the future and disease prevention. All of participants knew that hypertension was danger and causing stroke, heart disease, fell in the bathroom, and dangerous if untreated. Uncontrolled hypertensions cause other complication that is serious damage to the heart. Excessive pressure making arteries harder, the flow of blood and oxygen to the heart decrease. This condition cause heart attack, chest pain, heart failure, stroke, and kidney damage (WHO, 2021). Some of participants can explain the effect of hypertension and other only guess what the effect. Researchers also explore knowledge of participants regarding disease prevention. Half of participants explain that hypertension could be prevent by controlled the blood pressure regularly in health facilities and take of medicine routinely. The others told that hypertension could be prevent by controlling lifestyle such as be more physically active, drinking juice (star fruit), eat more fruit and vegetables, and take vitamin. It was in line with other study and theory that could be prevent by physical activity regularly, eat more vegetables and fruits, sleep adequately, and reduce salty (Irianti et al., 2021; WHO, 2021).

Adherence of taking hypertensive medicine was the important things to control the disease. Based on the results, most of participants taking medicine but only three of participants taking medicine regularly (once a day). Amlodipine was the common blood pressure medicine that was taken by the participants in Kwitang sub district. Two of participants only taking medicine when the symptoms appear. Two other participants took medicine from traditional counter to reduce the symptoms, and the other did not take medical treatment. Variation of participants adherence of taking hypertensive medicine caused by the awareness of them become addicted with the medicine. Some of participants explain that they felt healthy, so they did not necessary of taking medicine. Previous study showed, because hypertension requires continued treatment, patients thought that when the symptoms not appear, so they are not necessary to take hypertensive medicine (Ashoorkhani et al., 2018). Others emphasize the negative of medicine, they were afraid of taking it because of side effects as participant in the previous study (Boitchi et al., 2021; Salami, 2021). Other study has found that side effects of taking hypertensive medicine and the concern about its addictions to patients had led to lower the adherence of taking hypertensive medicine (Marshall et al, 2012). Lack of adherence of taking hypertensive medicine was the main predisposing factor the increasing of blood pressure (Unger et al., 2020).

Research findings about risk factors of hypertension among participants in Kwitang sub-district shows that participants experience in non-modifiable and modifiable risk factors. Several participants having family history of hypertension, both of their parents or only one of them. These findings in line with previous study that respondents with family history of hypertension also suffered with the disease (Sinuraya et al., 2017; Wahyuningsih & Arsi, 2021). Medical condition also related to the increasing of blood pressure leading to hypertension. Several participants suffering of the other disease beside hypertension such as diabetes, heart, cholesterol, heart attack, and obesity.

Almost all of participants experience in the modifiable risk factors regarding daily lifestyle such as smoking habits, alcohol consumption, sleeping quality, fruits and vegetables consumption, and physical activity. Surprisingly, although all of participant was a woman, half of them was a smoker, and several was still active until now. Most of active smoker said that they consume tobacco because of following their friends as solidarity. Previous study shows that smoking was a trigger of hypertension because it could reduce vascular tolerance to the damage that increase the blood pressure (Leone, 2015.) Someone that active smoker has a chance 1.86 times of getting hypertension (Singh & Purohit, 2011). About alcohol consumption, three participants experience of alcohol consumption, but they have stop now. Quit from smoking and reducing alcohol consumption could controlling the nervous system which leading to lowering blood pressure (Riyadina et al., 2019). Previous study indicate that incidence of hypertension influenced by unhealthy of modern lifestyles which tend to reduce physical activity (exercise), alcohol consumption, drinking coffee, smoking and prolonged stress. All of these were triggers for high blood pressure (Hamdana et al., 2018).

Activity of participants was still categorized as light until moderate because most of participants was a housewife (not working). All of them never doing any physical exercise beside of daily activity as a housewife. Being physically active such as increasing aerobic physical activity could help lowering high blood pressure (Irianti et al., 2021; WHO, 2021). In hypertensive patients, exercise is known as one of the non-pharmacological treatments. Sports was different from homework activities, because in exercise it must include the type, procedure and duration of it. Hypertensive patients recommended to exercise lightly and regularly at least three until five times a week with intensity of approximately 30 minutes. It could provide any benefits and also balance with sufficient activity (WHO, 2017). The daily of fruit and vegetables consumption of all participant were good enough, although only a few participants consume fruit together with the vegetables regularly. Consuming food and vegetable high fiber such as greens, banana, tomato, carrot melon and orange could help to prevent and lowering high blood pressure (Irianti et al., 2021; WHO, 2021).

However, all of the risk factors of hypertensive participants could be reduced by changing the lifestyle. Lifestyle changes could effectively lower blood pressure that equivalent to one dose of antihypertensive drugs (Beevers et al., 2001).

Conclusion

Knowledge of participants in Kwitang sub-district regarding hypertension (cause, effects and prevention) were good enough, but health behaviour to prevent the disease were still limited. It shows from research findings there were so many risk factors experienced by the participants. Being a lifelong illness, hypertension requires continued treatment, therefore identifying and controlling its risk factors could help to prevent the disease. Hypertensive prevention program in Kwitang sub-district has been done by public health center officer through "posbindu" program, but education regarding risk factors of the diseases still limited. Public health center in Kwitang sub-district should encourage hypertension programmes especially regarding its risk factors using promotion media which consider accessibility to the community. Further research with another characteristic of participants is suggested for researchers.

Author Contributions

All of the authors contribute in this research. Conceptualization, N.A and H.K.; methodology, B.W and L.F.; formal analysis, N.A and B.W.; investigation, N.A.; resources, H.K.; writing—original draft preparation, N.A.; writing—review and editing, B.W and L.F.; supervision, H.K.; project administration, N.A.; funding acquisition, N.A. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

This research has been reviewed and passed the ethical clearance from Faculty of Public Health Universitas Indonesia with the reference number of Ket- 36/UN2.F10. D11/PPM.00.02/2023

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Conflicts of Interest:

The authors declared no conflict of interest in this study. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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