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Penyimpangan Pola Prevalensi Hipertensi di Indonesia – Penyusulan oleh Perempuan pada Usia 28 Tahun: Masukan untuk Perbaikan Pelayanan Kesehatan

UNUSUAL PATTERN IN HYPERTENSION PREVALENCE IN INDONESIA – FEMALES OVERTAKE MALES AT THE AGE OF 28: POINT FOR HEALTH SERVICE PROVISION

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Abstract

This policy paper intends to provide inputs for community health program development on high blood pressure (HBP) prevention and treatment improvement. The latest two consecutive National Health Surveys in 2010 and 2013 revealed deviant pattern of HBP among pre menopause females. Earlier take-over of HBP prevalence is observed between females on males. Exploration on HBP risk by age and sex was performed. The findings showed higher prevalence of HBP risk among females. Age, obesity, emotional distress, and contraceptive use contribute to HBP occurrence. Result of analysis was inconclusive to identify precise risk of earlier take over of high blood pressure. It could probably due to hormonal contraceptive use and higher prevalence of risk among females. Since there was already higher health service utilization, it is recommended that the existing non communicable diseases (NCD) prevention and monitoring program is expanded to provide service for young females. Among the service provided are motivation for healthy diet, physical activity, mental health service and family planning.

Key words: NCD, hypertension, gender, health service, Indonesia

Abstrak

Artikel kebijakan ini bertujuan memberi masukan perbaikan program pencegahan dan penanganan hipertensi di puskesmas dan masyarakat. Riskesdas 2010 dan 2013 menunjukkan fenomena yang berbeda dengan negara lain. Prevalensi hipertensi perempuan pre menopause lebih tinggi dibandingkan lelaki. Tujuan analisa untuk melakukan eksplorasi faktor risiko yang menyebabkan terjadinya penyusulan prevalensi hipertensi pada usia relatif muda. Usia, indeks massa tubuh, distress emosional , jenis kelamin dan penggunaan kontrasepsi merupakan faktor kontributor yang dianalisa. Hasil menunjukkan usia merupakanmerupakan kontributor tertinggi terjadinya hipertensi. Prevalensi hipertensi perempuan non pengguna kontrasepsi tidak berbeda dengan lelaki, sedangkan pengguna kontrasepsi hormonal memiliki risiko lebih tinggi terhadap hipertensi dibanding pengguna kontrasepsi non hormonal. Hasil analisa belum dapat secara konklusif memperoleh faktor risiko yang menyebabkan terjadinya penyusulan dini hipertensi perempuan. Namun diduga terkait dengan penggunaan kontrasepsi hormonal dan lebih tingginya prevalensi faktor risiko hipertensi.

Kata kunci : PTM, jender, pelayanan kesehatan, hipertensi, Indonesia

BACKGROUND

Indonesia is a country facing a triple disease burden, infectious, non-communicable (NCD) and re-emerging disease. Among diseases with a high burden are cerebrovascular including heart diseases, and stroke.Globally cardio vascular diseases (CVD) has highest burden after communicable, maternal perinatal and nutritional condition 1 as shown in figure 1

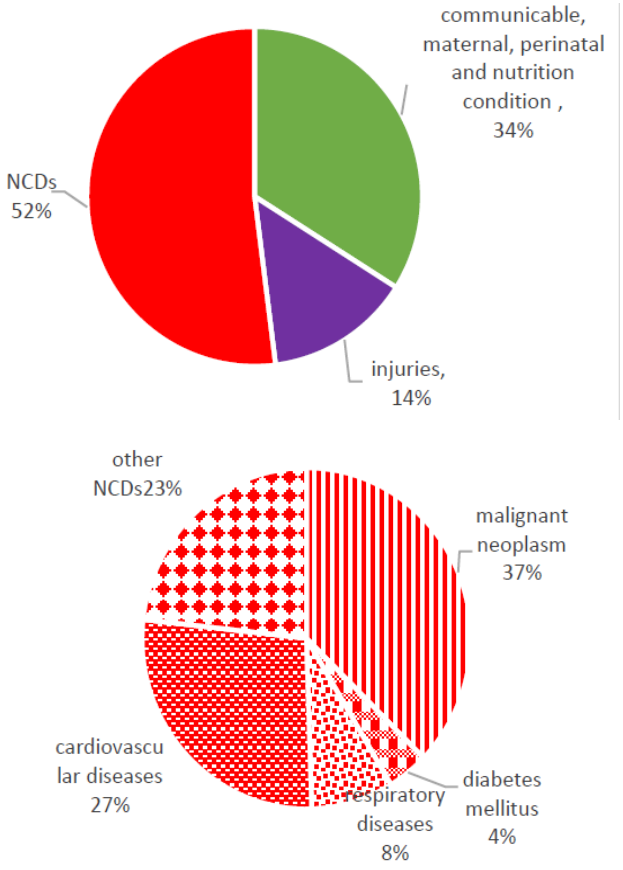

Fig 1. proportion of global death under the age 70 years by cause of death, comparable estimates, 2012, redrawn from.[1]

Hypertension is one important risk factor of NCD. It increases the probability of death both ischemic heart disease (IHD) and stroke. More than double increase risk of CVD could be experienced by those with blood pressure (BP) values between 130–139/85–89 (high BP) mmHg than those with BP levels below 120/80 mmHg.[2]

HBP is not a simple phenomenon. A number of important causal factors for hypertension have been identified, including excess body weight; excess dietary sodium intake; insufficient physical activity; inadequate intake of fruits, imbalance diet; hormone disbalances and excess alcohol intake.[1]

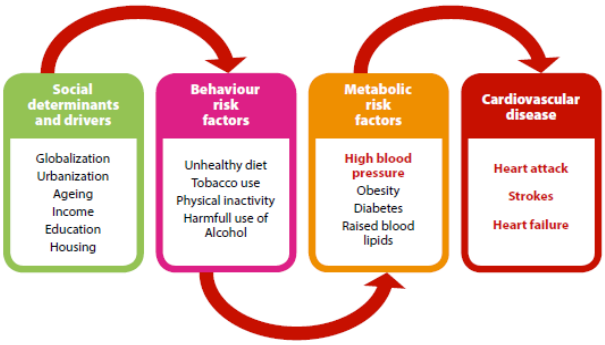

Fig 2. Main contributory factors to HBP and its complications (WHO 2014)

According to the JNC7[3] there is a sexual dimorphism in BP. Women have lower systolic blood pressure (SBP) levels than men during early adulthood, while the opposite is true after the sixth decade of life. Diastolic blood pressure (DBP) tends to be just marginally lower in women than men regardless of age. In early adulthood, hypertension is less common among women than men. However, after the fifth decade of life, the incidence of hypertension increases more rapidly in women than men. The prevalence of hypertension in women is equal to or exceeds that in men during the sixth decade of life. Several studies also document contribution of hormonal contraceptive use.[3]

HBP risks are interrelated. Obesity could occur due to lack of physical activity and or unhealthy diet pattern[4] which could associate with emotional distress.[5] People with emotional distress tend not to care on their health and appearance.[6,7] Although not directly related to HBP, studies show that smokers who bear greater risk for CVD tends to have higher prevalence of emotional distress. Emotional distress is influenced by many factors. Depression and anxiety may increase the risk of engaging in unhealthy behaviours, such as smoking, poor eating habits, and insufficient physical activity.[8] HBP is directly influenced by physiology / biology variables, while other variables influence HBP through physiology variable.

Gender inequities which tilt the power to

males can influence emotional distress to women and their psychological health. Women's sub-ordinate social status and lack of control over their lives, can also contribute to the higher prevalence of depression and anxiety disorders in women and girls, as compared to men and boys. Psychological distress was associated with under utilized of selected health care services, ignorance of healthy behaviour and no interest in lifestyle modification.[5] Females emotional distress prevalence is higher than that of males shown by Riskesdas 2007 and 2013.[9]

There are inconsistency findings on association between psychological distress and HBP. The 2014 Report on Global NCD stated psychological stress is among factors that contribute to the high prevalence rates of hypertension. Although the contribution of psychosocial factor on hypertension is only strongly moderate. Acute and enduring stressors directly impact on blood pressure control. However same level of stress exposure has different impact on individuals. Individual characteristic such as genetic predisposition, personality style and adaptability might contribute to body response which could lead to protect from increasing blood pressure.More psychological distress and more severe mental health problems which interfering with daily life including working were reported among those with HBP. Part of the reason people who are lonely and depressed are more likely to get sick is that they are more likely to make lifestyle choices that are self-destructive than life enhancing. However there are studies found protective effect of emotional distress on HBP.[10,11]

Based on the 2014 NCD Global Report, Indonesia is in the lowest level of high blood pressure (HBP) together with Australia.[1] Although compared with other countries, the Indonesian HBP is 'safe', but the pattern between females and males is quite a deviant from the normal condition as shown in the figure. [4]

Generally Figure 4 and 5 show the prevalence HBP normal common pattern, increasing HBP prevalence as person become older. However the age pattern in Indonesia is different. Females HBP prevalence overtakes the males one at the age of 28 as compared to 50 in the rest of the world in Figure.[5] It is not in line with the observation which stated that females HBP tends to be lower than that of males at pre-menopause age.[12] Indonesian data revealed the crossover between females and males HBP prevalence occurred at much younger age at 28 – 29. This phenomena is intrigues curiosity on probable reason behind it.

Several hypothesis are developed to explain probable reason of deviant crossover pattern between Indonesian females and males. Generally the hypothesis stated that there is different pattern of HBP related risk behaviour among Indonesian females with other countries. Prevalence of Indonesian females HBP related risk behaviours are higher compared to other countries.

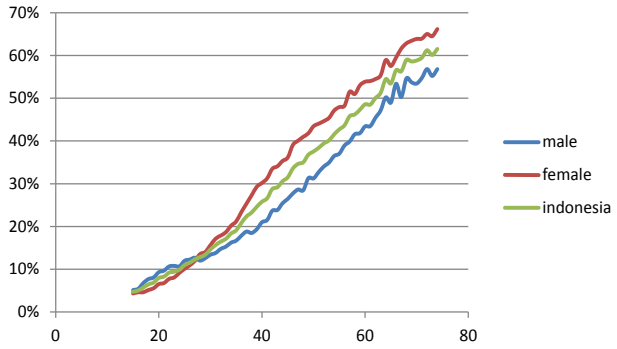

Fig 3. Prevalence of High Blood Pressure by Age and Sex in Indonesia,Riskesdas 2013

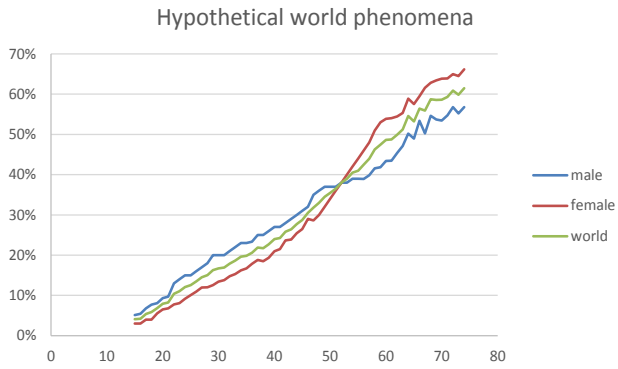

Fig 4. Hypothetical Prevalence of High Blood Pressure by Age and Sex in the world

METHOD AND MATERNAL

To test the hypothesis, several methods are applied; comparing Indonesian phenomena obtained from published reports with analisis results of 2013 Riskesdas data. Respondents for the analysis

are those age 15 or above. Blood pressure is the dependent variable while the independent variables are body mass index, fibre consumption, emotional distress, age and contraceptive use. There are 640136 respondents fulfilled the criteria.

RESULTS

The first hypothesis tested is to find difference between Indonesian females BMI with other countries. The finding is shown in the figure below.

Defining obesity as BMI >= 30 kg/m2, the figure shows Indonesian females is more obese than males regardless age. However compared with world phenomena, Indonesian obesity is in the low prevalence group.

Although compared with other countries, prevalence of Indonesian females BMI>= 30 is not striking, the fact of higher females obesity prevalence could probably contribute of HBP crossover occurred in quite younger age for Indonesian females. The protective effect of estrogen could still protect females until the age of 30 as shown in figure 5 which show no sharp distance. But as the distance become sharper, it then competes with other HBP related risk behaviour such as not enough fibre diet, emotional distress and hormonal contraceptive use. Riskesdas 2013 analysis of HBP related risks indicates almost similar pattern. Females prevalence is always higher than that of males. Prevalence of Indonesian in-sufficient physical activity is not satisfactory as stated in the 2014 Global NCD Report1. There is no striking difference of fibre consumption defined as having at least 5 portion of fruit and vegetables daily shown in figure 8.

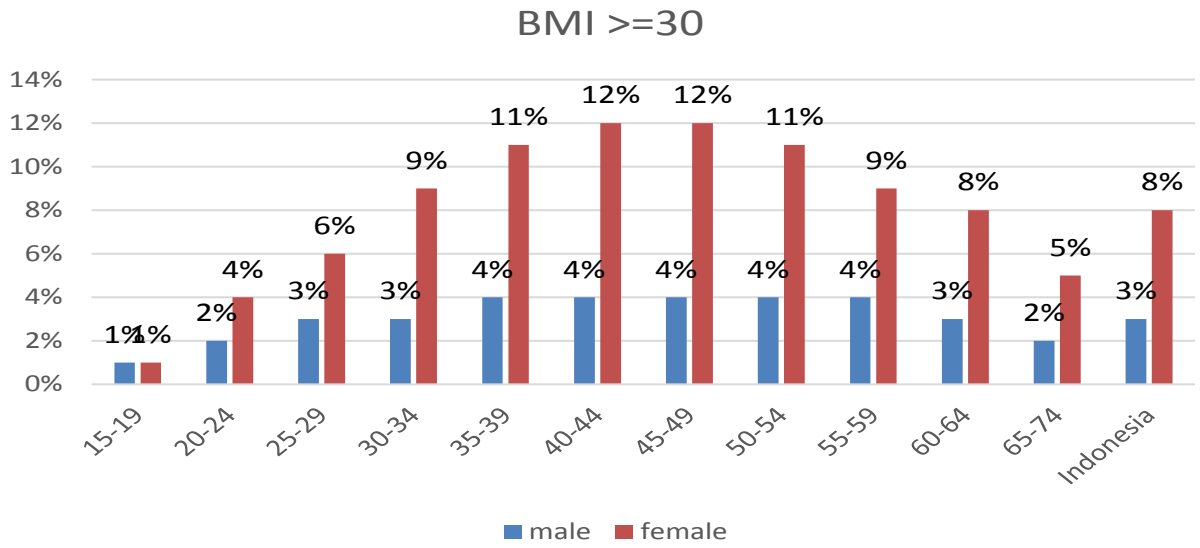

Fig 5. Prevalence of BMI >= 30 Kg/m²by Sex, Riskesdas 2013

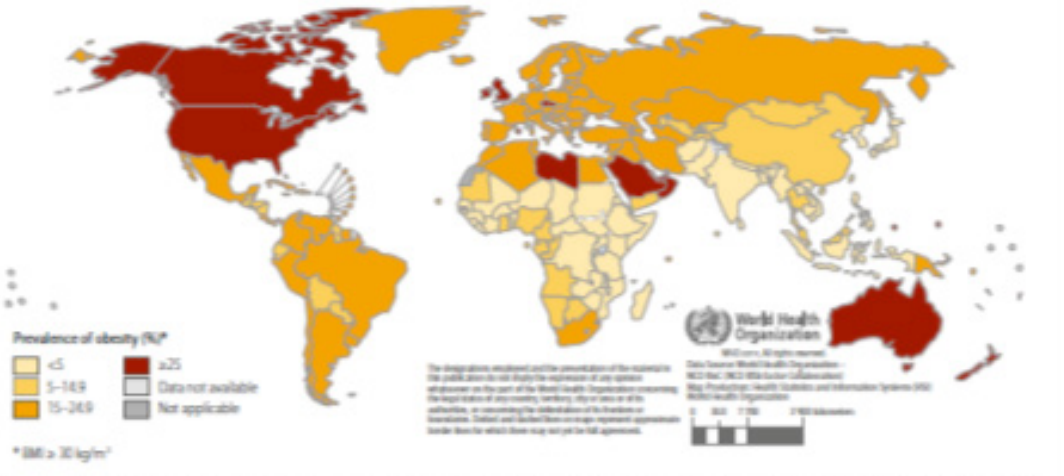

Fig 6. Age standardized prevalence of obesity in men aged 18 and over (BMI>=30 kg/m2), 2014 (WHO 2014)

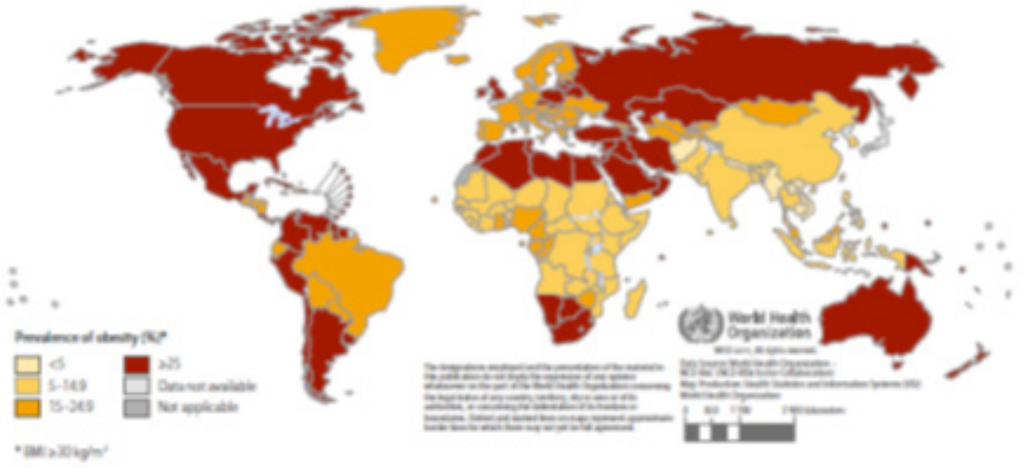

Fig 7. Age standardized prevalence of obesity in women aged 18 and over (BMI>=30 kg/m2), 2014 (WHO 2014)

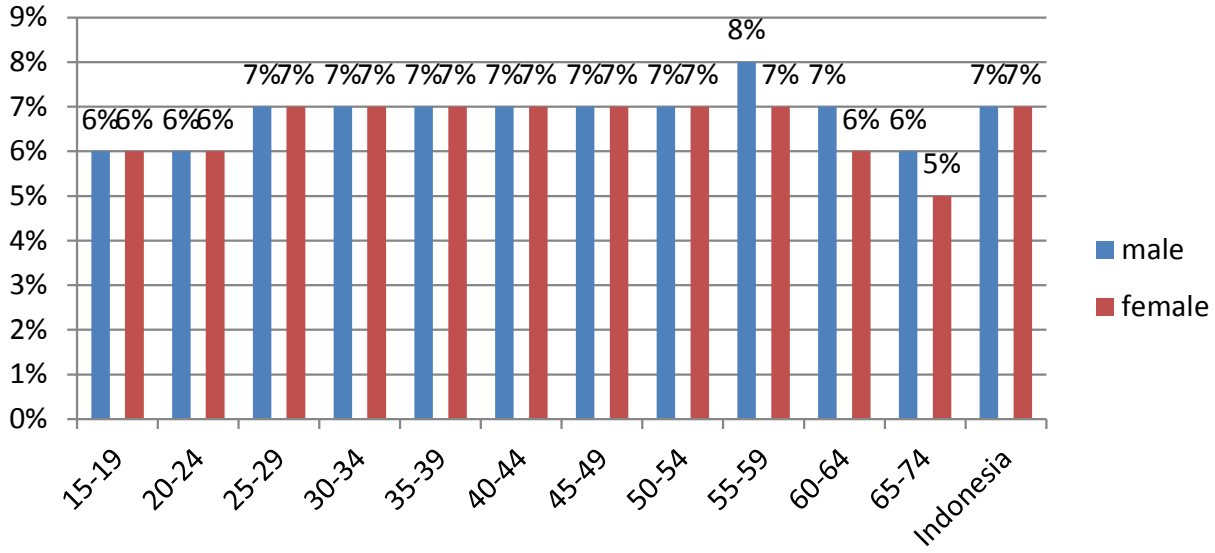

Fig 8. Prevalence of fibre consumption by Sex, Riskesdas 2013

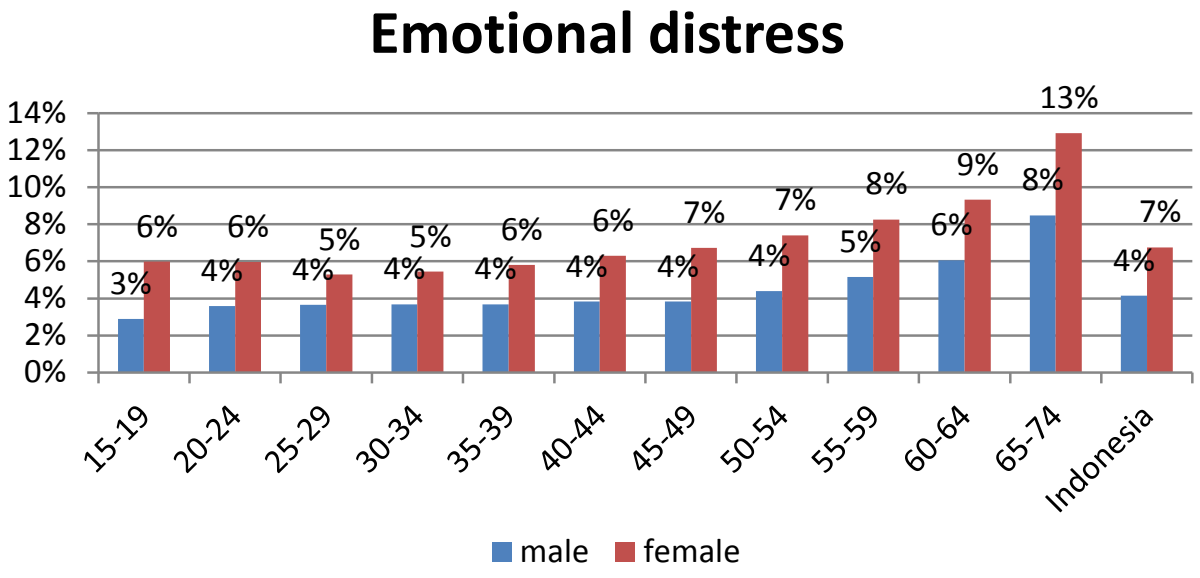

Fig 9. Prevalence of emotional distress by Sex, Riskesdas 2013

Defining emotional distress as those with Self Report Questionnaire (SRQ) score at least 6,[13] analysis of 2013 Riskesdas data reveals higher prevalence of females emotional distress than that of males. The phenomena is similar to other countries that women report significantly higher levels of mental distress than men in community studies around the world.Females have higher rates of depression than males, a disparity that emerges in adolescence and persists into adulthood. However Indonesian females psychological distress prevalence is not different from other countries.[14]

The current data does not explain the observed pattern; hence more analysis might be needed to explain this pattern. The suggested direction should include gender aspects.Power dynamics where males has greater power than females appears often stated as root of females disadvantage position in health / worse health status.[15] For example in many countries where men primarily smoke, women are affected by adverse health outcomes related to passive smoker. It is likely to prevent women from establishing smoke-free homes. In Syria, over 80% of households studied in Aleppo placed no restrictions on indoor smoking, and a quarter of women reported irritation due to indoor passive smoker.

Indonesia is among countries with quite high contraceptive prevalence rate in Asia. It is because of women targeted to have greater responsibility in population control policy. There is higher proportion females contraceptive use than males. Hormonal contraception which is also risk for HBP[1] is the most preferred method.

Males are as reference group. In general the figure shows that increasing age associate with increasing HBP. Lowest prevalence of HBP is in youngest age category. It is appears that HBP females prevalence is lower or quite similar with that of males until under 25-29 age group. This phenomenon is in line with the theory that HBP prevalence is lower in never use contraception female group than males. At age 30 – 34 females HBP prevalence start to take over that of males except females never use contraception which shown similar HBP prevalence 15%. But in the higher age category shows HBP prevalence is always higher for females although not yet reach menopause age. As a country with high prevalence of hormonal contraceptive use, it is necessary to explore the contribution of this factor regarding the younger crossover HBP prevalence phenomena.

To get more understanding of each HBP risk contribution on HBP, logistic regression is performed. Figure 11 showed that age contributes significantly on HBP, followed by obesity, emotional distress and fibre consumption. Compared with males and never use contraceptive females, It shows that current hormonal contraception user has 20 - 30% higher risk to get HBP. Females never use contraception has almost same risk with males to get HBP. However there is data limitation as there is no information on the duration of contraceptive use.

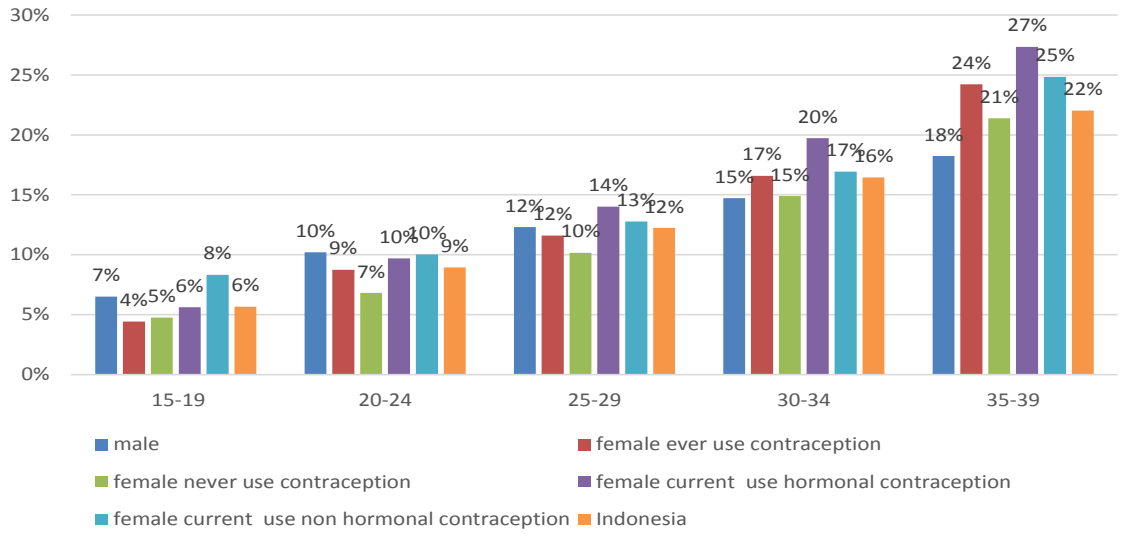

Figure 10. Prevalence of HBP by sex age and contraception

Table 1. Contribution of age, fibre consumption, emotional distress, obesity and contraception use on HBP

	OR	95.0% C.I.	
		Lower	Upper
Age			
15-19	1		
20-24	1.5	1.4	1.5
25-29	1.8	1.7	1.9
30-34	2.3	2.2	2.4
35-39	3.2	3.1	3.4
40-44	4.5	4.4	4.7
45-49	6.2	6.0	6.4
50-54	8.0	7.7	8.3
55-59	9.8	9.4	10.2
60-64	12.9	12.3	13.4
65-74	18.7	18.0	19.6
Contraception use			
Males	1		
Femalesever use contraception	1.3	1.2	1.3
Femalesnever use contraception	1.1	1.0	1.1
Femalescurrent use hormonal contraception	1.4	1.3	1.4
Fmlcurrent use non hormonal contraception	1.2	1.1	1.2
IMT>=30	2.1	2.1	2.2
SRQ>5	1.2	1.1	1.2
fibers< 5 portion	1.1	1.0	1.1
Constant	0.0		

In most countries where gender inequality assumed to exist, the barrier to health access for women is often highlighted. It is often assumed as among factors of lower females health status. It can inhibit their ability to access healthcare services without males consent.[15] But it is not case in Indonesia.

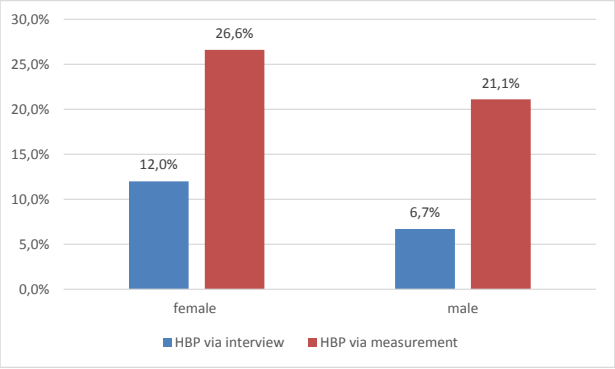

Fig 11. Unmet need of HBP treatment

Riskesdas 2013 data revealed that higher proportion of females use health service than males as shown in Fig 12. There is higher proportion of females reported ever diagnosed hypertension by health provider revealed by the interview. The figure explained that only 12% among females and 6.7% of males respondents said they ever diagnosed by health provider or feel HBP symptoms. Whereas the figure is higher when directly measured.This information implies that higher proportion of females visit health service to measure their level of blood pressure.

DISCUSSION

There is deviant HBP pattern between females and males in Indonesia. The latest Indonesian Household Health Surveys showed

higher prevalence of females HBP regardless of age. Compared with other countries, it appears that crossover of HBP prevalence occurs at much younger age. This phenomenon is not in line with other countries. In general, epidemiological studies indicate that the prevalence of hypertension is greater in men than women regardless of race, ethnicity or country of origin. A secondary analysis of the prevalence of hypertension conducted on 46 population-based studies from 22 different countries during the period of 1960-1991 found the prevalence of hypertension in most but not all studies was higher in men than women.[12] Indonesian phenomena need to be explored for more appropriate program development. Biologically pre menopause women got natural protective effect from estrogen.[16] Since HBP is also influenced by behaviour factor,[17,18] it is assumed that behaviour factors have significant contribution on the deviant HBP pattern of Indonesian pre menopause females.The analysis shows that except for fibre consumption, females constantly have higher prevalence of HBP risks, among which are BMI $\geq$ 30, emotional distress and contraceptive use. Together they could lead to earlier HBP among Indonesian women. Contribution of each independent variables in this analysis already identified separeately.[19,20,21,22] This analysis explore the contribution of those variables together and support the hypothesis raised by Isfandari [23] on contribution of emotional distress and contraceptive use on HBP while reviewing HBP phenomena reported in Riskesdas 2007using gender perspective.

Although Indonesian data reveals deviant in HBP prevalence crossover between females and males, but no unusual phenomenon regarding HBP risk comparing with other countries. The fact of higher HBP risk among female could shed light for health policy development. Understanding the reasons behind the unusual HBP cross over and gender differences is crucial. It could overburden universal health coverage in Indonesia thru NCD especially since females has longer life expectancy. Discerning the reason behind unusual gender difference in hypertension is important for effective prevention strategies development. The information could also provide inputs for the future costs of long-term medical care for chronic disease among women.

Currently most female health related researches in Indonesia are still focus on pregnancy and reproductive health. It is because Infant Mortality Ratio (IMR) and Maternal Mortality Rate (MMR) is sensitive indicator of health service progress and gender status indicator. It left out other females health condition which needs concern. There are still scarce studies analysing gender difference on the topic beyond reproductive health, namely non communicable diseases (NCD) which already shows high tolls in disease burden. This analysis is important for the health policy makers to be more aware on the importance of considering gender aspect in the NCD management. Larger social, economic and political context is important components in promoting women's health. Therefore gender sensitisation is necessary.

Primary health care (PHC) popular as Puskesmas, the front liner health service gives priority service for mother and child. It is in line with the national effort to reduce IMR and MMR. NCD control program developed by MOH such as regular exercise, healthy diet, mental health service already applied at Puskesmas in several districts with main objective to detect and prevent main NCD such as heart disease, Diabetes. The services provided are weighing and blood pressure measurement. The programs known as POSBINDU, integrative health service with those age 60 or more as main target. Providing that Indonesia already have quite strong health service infra structure supported by community oriented program, this program could be expanded for younger age. It is necessary that priority should be provided for younger mother with HBP such consultation for safe contraception. School health program already developed by MOH for quite a long time, although its implementation depended on the district policy.

Conclusion

Younger crossover of HBP prevalence between Indonesian women and men implies that health service should consider this phenomenon. Indonesian women encounter higher risk for HBP and NCD in general. It is time to expand its

service on NCD related risk factors for younger age. Promotion on physical activity, diet pattern, mental health service and family planning consultation should be consider to be included in health service. Results of this analysis can be used as inputs for intervention strategy development. Special attention is needed / necessary for females regarding diet program, mental health and family planning service. While contribution of exercise on reducing HBP are well documented.

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