

## **The Correlation of Stress Level with Hypertension Prevalence on Hypertension Clients at Leuwigajah South Cimahi Community Health Center in 2014**

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### **Abstract**

The research background is hypertension prevalence is a degenerative disease which prevalence rate is high enough in all over the world and In Indonesia especially. Hypertension is a someone condition has blood pressure experiences above the normal that causes the morbidity and mortality rates. The 140/90 mmHg blood pressure based on 2 phase in every pulse rate is systolic phase 140 stated blood pulse which pumped by heart and 90 diastolic phase stated that blood return to the heart. From the assessment was obtained at Leuwigajah south Cimahi Community Health Center that hypertension prevalence has increased in 2011 - 2013. The research aims to identify the correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah Community Health Center. The research method used descriptive with correlational design and cross sectional study approach. The research samples were as many as 90 respondents with samples collecting used accidental sampling technique. Data were obtained by using univariate analysis with percentage and bivariate by using chi-square statistic test with the p value 0,05. Based on research result analysis was obtained that there is correlation between stress level with hypertension prevalence with p value  $p(0,001) < \alpha(0,05)$ . The research results are hoped that for Community Health Center is able to focus on hypertension risk factor especially stress level and more give attention to communities about the hypertension risk factors through the preventive and promotive efforts without ignore the curative and rehabilitation to communities at area work of leuwigajah South Cimahi Community Health center.

**Key words:** *Cross Sectional*, hypertension, stress level

### **Introduction**

Hypertension is usually called as –silent killer, it is caused the hypertension sufferers in years without any disorder or symptom. Unconsciously, the sufferers have complication on vital organs such as heart, brain, and kidney. Hypertension symptoms are such as headache, it almost occurs as hypertension in medium phase when blood pressure has been in the significant rate. (Triyanto, 2014)

The amounts of Hypertension sufferers recently are almost many in developing countries. Global Status Report on Non-communicable Diseases 2010 Data of WHO stated that 40% developing countries have hypertension sufferers; meanwhile the modern countries have only 35% sufferers. (Indonesia Health Dept. 2013). Hypertension prevalence in Indonesia is still high, besides that, the effect of it is able to make problems of community health. Hypertension is one of risk factors influence toward coronary and blood vessel diseases. (Health Dept,2012)

Based on the health research stated that most of hypertension cases in communities have not been diagnosed. It is known from blood pressure assessments on sufferers aged above 18 years old were founded hypertension prevalence in Indonesia as many as 31,7%, where only 7,2% people who knew that they suffered from hypertension and it was only 0,4% cases sufferers who consumed hypertension medicine. It showed that 76% hypertension cases in community has not diagnosed or 76% people have not known that suffered from hypertension. (RisKesDas,2010)

Accordance to Setiawan research (2004), This research showed that hypertension prevalence in Java Island were as many 41,9%, approximately 36,6%-47,7% in every province. In the City prevalence were 39,9% (37,0%-45,8%) and in the village area were 44,1% (36,2%-51,7).

Based on the result of Cimahi city Health Department survey in2013, there are 10.249 people suffered from primary hypertension meanwhile sufferers who had secondary hypertension were 13 people, it indicated that primary factor dominant than secondary factor. (Cimahi city Health Department, 2013)

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Correlated to the stress in the globalization era, *World Health Organization* (WHO) reprimands us about global financial crisis on mental health condition of world people. According to WHO, Global financial crisis recently has made people in depression, stress, mental disorder, and easy hopeless feeling. (Prasetyorini, 2012)

The research conclusion is there is correlation between stress with hypertension complication prevalence on hypertension clients at Leuwigajah south cimahi Community Health Center. It is hoped the hypertension clients are able to identify the stress and know how to manage it in order to the disease will not become worst and cause the other complications. The previous study result based on the researcher done at Leuwigajah South Cimahi Community Health Center on January 30 to February 1, 2014, there were from 7 hypertension clients that 3 clients stated that they did not have degenerative of hypertension and they were not the smokers, alcohol consumers, and not consuming salted food as well but they had hypertension experienced because they had hard thinking or work under pressure and 4 people who stated many family burdens so that it made them had hypertension, hypertension causes by anxiety, and life style in consuming food irregular made them hypertension experienced. Furthermore, based on the interview result that researcher did on 3 officers of leuwigajah cimahi community health center area work has increased every years and hypertension disease is the second rank disease at that leuwigajah south cimahi community health center.

From that interview result above, the researcher was interested in carrying out the research. The correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community health center in 2014.

The research aimed to identify stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community health center in 2014, with to know the stress level description at Leuwigajah South Cimahi Community health center in 2014 and to see the correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community health center in 2014.

### Method

The research method used descriptive method with correlational design by cross sectional approach to obtain the data. The populations in the research were all hypertension clients from Leuwigajah south cimahi community health center on August 2013-January 2014 were as many as 1.306 respondents. Sampling technique used in this research was *accidental sampling*. Samples in this research were as many as 90 hypertension clients at Leuwigajah South Cimahi community health center.

Data collecting technique and data that collected consist of primary and secondary data.

a. Primary data was data collecting done as directly by contributing the questionnaire included client identity or samples (stress scale on hypertension clients). By carrying out the assessment of DAS 42 stress scale accordance to lovibond (1995) that has been tested by damanic(2006). Which consist of 14 symptoms groups. Each group of symptom was given score between 0-3 that score as follows:

- 0 = none or never
- 1 = sometime
- 2 = usual
- 3 = almost usual with has experienced

After the data were collected, counted and grouped into stress level accordance of lovibond DASS 42 as follows:

- 0-6 : mild stress
- 7- 23 : moderate stress
- 24- 29 : heavy stress
- >30 : severe Stress

b. Secondary data

Secondary data is data that available at Leuwigajah south cimahi community health center consisted of hypertension clients that has been categorized become:

- 140/90 mmHg = mild hypertension
- 160/100 mmHg = moderate hypertension
- >180mmHg = Heavy hypertension

After the data collected will be inserted into SPSS program become as follows:

- 4. = Mild hypertension
- 5. = Moderate hypertension

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6. = Heavy hypertension

Research instrument is tools that will be used to collect the data. Research instrument can be as, questionnaire, observation form, forms that correlates with data publisher and others.(Notoatmodjo, 2010). In this research, data collecting used DASS (*Depression Anxiety Stress Scale*) questionnaire, which developed by lovibond in 1995, it has been translated by Damanik in 2006 (Damanik, 2006). Questionnaire were as many as 14 taken from number questionnaire of DAS 42 1,6,8,11,12,14,18,22,27,29,32,33,35, and 39 from damanik in 2006 (Damanik,2006). *Sphygmomanometers and stethoscopes are instruments that used to measure blood pressure. We can detect someone has or no the hypertension disease from the measure result and doctor diagnose of Community health center* (Dewi, 2013).

Research procedure

1. Preparation Term
  - a. Formulating the problem in the research place
  - b. Deciding the research topic
  - c. Cooperating with research field to preface study
  - d. Making research proposal and instrument as well
  - e. Carrying out the proposal seminar
2. Implementaion Term
  - a. Obtaining the permit to do the research at Leuwigajah South Cimahi Community Health Center.
  - b. Giving explanation to the research team or friend who will help in the research to distribute the questionnaire and *informed consent*.
  - c. Carrying out the questionnaire distribution to the hypertension clients, it is targeted to all respondents.
  - d. Designing the questionnaire result that had been fulfilled by respondents.
  - e. Implementing the process and data analysis up to the end of the final preparation.
  - f. Taking the conclusion.
3. Final Term.
  - a. Designing research result report.
  - b. Presenting the research result.
  - c. Research result documentation.
  - d. Implementing the final presentation

**Results**

Research result was done by researcher to identify the stress level and hypertension prevalence on 90 hypertension clients as follows,

**1. Stress level description**

**Table 1 Stress level description on hypertension clients at Community Health Center of Leuwigajah South Cimahi in 2014**

Stress Level	Frequency	Percentage (%)
Mild	8	8.9
Moderate	25	27.8
Heavy	33	36.7
Severe	24	26.7
Total	90	100.0

Percentage of the highest stress level was heavy stress level and severe. It was known from 90 respondents who described the heavy and severe achieved to 50%.

**b.Hypertension Prevalence Description**

**Table 2 The description of hypertension prevalence on hypertension clients at leuwigajah South Cimahi Community Health Center in 2014.**

Hypertension Prevalence	Frequency	Percentage (%)
Mild	25	27.8
Moderate	31	34.4
Heavy	34	37.8
Total	90	100.0

The highest Percentage is heavy percentage, it was shown from total amount of 90 respondents that described of heavy hypertension reached 50%.

**Table 3 The stress level with hypertension prevalence on hypertension clients at Leuwigajah South Cimahi Community Health Center in 2014.**

Stress Level	Hypertension prevalence			Total	P Value
	Mild	Moderate	Heavy		
Mild	6 (75%)	2 (25%)	0 (0.%)	8 (100%)	0.001
Moderate	7 (28.%)	13 (52.%)	15 (20%)	25 (100%)	
Heavy	8 (24.2%)	12 (36.4%)	13 (39.4%)	33 (100%)	
Severe	4 (16.7%)	4 (16.7%)	16 (66.7%)	24 (100%)	
Total	25 (27.8%)	31 (34.4%)	34 (37.8%)	90 (100%)	

A few of respondents from 31(34.4%) respondents who had moderate hypertension disease, meanwhile 2(25%) respondents had mild stress, and 13 (52%) respondents had moderate stress. Furthermore almost a half of 12(36,4%) had heavy stress and a few of 4 (16.7%)respondents had severe stress.

A mount of Respondents were as many as 34(37.8%) respondents had heavy hypertension that obtained as follow, most of respondents were as many as 16(66,7%) respondents had severe stress, and 13(39,4%) respondents had heavy stress, 15(20%) respondents had moderate stress, nobody of respondents who has not mild stress on heavy hypertension case. Statistic test result was obtained p value  $p < 0,001 < \alpha (0,05)$  means  $H_0$  rejected, so there is correlation between stress level with hypertension at leuwigajah community Health Center.

**Discussion**

1. The description of stress level on hypertension clients at leuwigajah south cimahi Community Health Center in 2014.

Based on statistic test result above, there was the highest rate in that statistic as many as 33(36,7%) respondents had heavy stress, it was caused by many stress trigger factors on communities at Leuwigajah South Cimahi Community Health Center such as Economy problems, family members who had health problems, social, and other health problems. It seems that the problem factors have not obtained the concern from Community Health Center officers and individual self. According to researcher after looking at the stress percentage of respondents were caused by psychology problems which triggered by health problems of family members, economy or other problems. Meanwhile the problems have been thought as the normal problems by the individual who had experienced it, while it is serious psychology problem should be cared because the stress stimulate the Epineprin enzym. The other factors are able to cause the stress on someone such as, family problems, economy factor, social and life experiences. Meanwhile, on the communities at community health center clients possible triggered heavy stress problems such as, economy, family health problems and daily life experience factors.

Based on the analysis above accordance with Nasir Theory, (2011) that stress sources in individual life can be caused by many factors such as, stress source in family, community and environment factors.

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Those problems can cause heavy stress prevalence on communities become the highest rate. Most of the stress factors have not known and cared by communities especially at Leuwigajah Community Health Center area work.

2. The description of hypertension prevalence on hypertension clients at Leuwigajah Community Health Center in 2014.

The result of statistic test was obtained the highest rate as many as 34(37,5%) respondents. High percentage is the description of hypertension prevalence rate at leuwigajah Community Health Center is high enough, so it means that it is needed the serious management in the future, besides curative from Community Health Center officers. Otherwise preventive and promotive are needed as well because hypertension is able to recovery from many aspects such as bio and psycosocial.

The primary preventive efforts are able to be implemented to prevent the hypertension prevalence such as, to change the high risk hypertension factors on the risk group of hypertension. The primary preventive efforts of hypertension such as food diet and good consume food, do exercise or sport routine, reduce the weight, reduce the alcohol consuming, stop smoking, and change the life style.

The health management in secondary term of hypertension that has re-occurred or to prevent it becomes worst by early detection.

This prevention in direct to treat clients and to reduce the implications more serious from disease, namely through diagnose early and the provision of treatment. If the detection is not done early and therapeutic not given immediately then will happen clinical symptoms that is injurious.

The implementation management of tartier the efforts to prevent complication heavier or death. Prevention tartier the prevention of various way because of worse, with the purpose of improving the quality of life of patients. The Prevention tartier focused on rehabilitation and recovering from to happen ill to minimize pain, disability, and improve the quality of life implementation management of tartier (Triyanto, 2014)

c. The correlation of stress level with hypertension prevalence on hypertension clients at Leuwigajah Community Health Center in 2014.

Based on the results of research on table 4.3 obtained the result that  $p \text{ value } ( 0,001 ) < \alpha ( 0,05 )$  which means  $H_0$  rejected, it means there are relations between the level of stress with the hypertension prevalence. This is because after conducted statistical tests by linking between the level of stress with the hypertension prevalence obtained the results of where most were respondents between the level of stress raising up with a severe hypertension have the highest percentage which is 16 people(66.7 %). It stated that there had been very significant relations between the level of stress with the hypertension prevalence at Leuwigajah Community Health Center area work.

According to researchers analysis that the more trigger stress experienced someone the more large someone it had hypertension, it is caused by because stress will spur the nervous system sympathetic. Saraf sympathetic will spur blood vessels, as excitative emotion. The medulla adrenal issued epinephrine that causes vasokonstriksi blood vessels. Vasokonstriksi cause to flow blood to the kidney reduced so stimulate coating renin by the kidneys.

Mechanism the hypertension started since the enactment of angiotensin II from angiotensin I by angiotensin converting enzyme ( ACE ). The ACE in the role important in regulating blood pressure. The blood contains angiotensinogen who in the production in the liver. Next by a hormone renin will be converted a angiotensin I, next by ACE that is in Lung-pulmonary, angiotensin I converted into angiotensin II. Angiotensin II is a substance occurring naturally that causes the increase in blood pressure through vasoconstriction blood vessels and retention salt and water. (Smeltzer, 2003 )

B That theory is already proved by researchers that someone who has heavy stress will suffer from a disease hypertension. this research in line with the results of research of Prabowo in 2005. It showed that the proportion of stress among respondents as much as 68,29 % and the proportion of hypertension among respondents 68,29 % as much as. Testing shows chi-square with 5 % degrees and it suggests meaningful there was a correlation between stress and with the hypertension prevalence ( $p \text{ value } = 0,0001$ ). based on the data and the theory of stress and above the incident hypertension having relationships because someone who undergoes pattern stress usually fed as well as life style irregular. Food consumption pattern irregular like of foods high in salt would result in disease hypertension. Whereas if it is considered from the perspective of pathophysiology someone who undergoes stress will automatically stimulate the nervous system sympathetic and sympathetic nervous system that is what will activate in the cause of stress hormones.

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According to the results of research although there is a relationship between stress with the occurrence of hypertension, but at some people who have hypertension not caused by stress, it is the presence of other factors that also affect not researched as lifestyle that irregular, smoking habit, culture, the acts of descent and obesity. (Dalimartha dkk, 2008)

### Conclusion

Based on the research done which have taken place at leuwigajah south Cimahi Community Health Center 2014 about- Correlation of stress level with the hypertension prevalence on clients with hypertensionl so it is obtained the conclusion as follows,

1. From 90 respondents had hypertension disease at Leuwigajah Community Health Center was obtained the highest respondent rate with heavy stress were as many as 33 (36.7%) clients.
2. From 90 respondents had hypertension disease at Leuwigajah Community Health Center was obtained the highest respondent rate with severe stress were as many as 34 (37.8%) clients.
3. There is correlation between stress level with hypertension prevalence at Leuwigajah Community Health Center in 2014 with  $p$  value  $(0,001) < \alpha (0,05)$  .

### Acknowledgement

This research was supported by STIKes Budi Luhur. We thank our colleagues from STIKes Budi Luhur who provided insight and expertise that greatly assisted the research, although they may not agree with all of the interpretations/conclusions of this paper. We thank Kiki Buqori for assistance with particular technique and Ilbert Rizal for comments that greatly improved the manuscript.

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