

MALAYSIAN JOURNAL OF

Medicine and Health Sciences

Vol. **20** SUPP **9** / November 2024

"The 7th International
Symposium of Public
Health 2023 (ISoPH 7)"



A scientific journal published by Universiti Putra Malaysia Press

Abstracted / indexed in the Scopus database



Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
43400 UPM Serdang,
Selangor Darul Ehsan
Malaysia
<http://medic.upm.edu.my/>

UPM Press
Universiti Putra Malaysia
43400 UPM Serdang,
Selangor Darul Ehsan,
Malaysia
<http://penerbit.upm.edu.my/>

PENERBIT
UPM
UNIVERSITI PUTRA
MALAYSIA
P R E S S



The Malaysian Journal of Medicine and Health Sciences (MJMHS) is published by the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. The main aim of the MJMHS is to be a premier journal on all aspects of medicine and health sciences in Malaysia and internationally. The focus of the MJMHS will be on results of original scientific research and development, emerging

Editorial Board

Editor in Chief:

Prof. Dr. Rukman Awang Hamat

Coordinator:

Dr. Tan Kit Aun

Members:

Prof. Dr. Normala Ibrahim

Prof. Dr. Christopher Lim Thiam Seon

Prof. Dr. Ching Siew Mool

Prof. Dr. Shamili Vidyadaran

Prof. Dr. Loh Su Peng

Prof. Dr. Andee Dzulkarnaen Zakaria

Assoc. Prof. Dr. Rajesh Ramasamy

Assoc. Prof. Dr. Sethu Thakachy Subha Assoc.

Prof. Dr. Nur Afiah Mohd Zulkefli Assoc. Prof.

Dr. Wan Aliaa Wan Sulaiman Assoc. Prof. Dr.

Ling King Hwa

Assoc. Prof. Dr. Habibah Abdul Hamid Assoc.

Prof. Dr. Zubaidah Nor Hanipah Assoc. Prof.

Dr. Intan Hakimah Ismail

Assoc. Prof. Dr. Ho Yu Bin

Assoc. Prof. Dr. Karmegam Karuppiah

Assoc. Prof. Dr. Omar Ahmed Fahmy Ahmed

Assoc. Prof. Dr. Rafee Baharudin

Assoc. Prof. Dr. Sarva Mangala Praveena

Assoc. Prof. Dr. Roslaini Bin Abd. Majid Assoc.

Prof. Dr. Ashley Edward Roy A/L Soosay Assoc.

Prof. Dr. Pike-See Cheah

Dr. Navin Kumar A/L Devaraj

Dr. Raymond Yeak Dieu Kiat

Dr. Razif Abas@Buang

Dr. Sandra Maniam

Dr. Ruziana Masran

Dr. Manraj Singh Cheema

Dr. Amilia Alzan Binti Mohd Jamil

Dr. Azlina Binti Yusuf

Dr. Fahisham Taib

Maflam Shalin Lee Wan Fei

Lead Guest Editor:

Dr. Trias Mahmudiono

Head of Committee:

Prof. Dr. Ririh Yudhastuti

Dr. Laura Navika Yamani

Ms. Zida Husnina

International Editorial Member

Prof. Dr. Hendrik Setia Budi

Assoc. Prof. Dr. Bipin T Varghese

Dr. Basmah Hassan Mohammed Elwakil

International Advisory Board

Prof. Dr. Cecilia A. Essau

Prof. Dr. David Brendan Price

Prof. Dr. S Suresh Kumar

Assoc. Prof. Dr. Sean Semplicé

Dr. Marlin Wong Chi Sang

**Malaysian Journal of
Medicine and Health Sciences
Vol. 20 SUPP9, November 2024**

Contents

ORIGINAL ARTICLES

The Relationship of Knowledge, Attitudes and Actions of Cadres in the Discovery of Suspected Cases of Diptheria in the City of Probolinggo Indonesia <i>Maharani, Dewi Rokhmah, Muslimat Erna Ekawati</i>	1
Correlation Between Exclusive Breastfeeding, Frequency and Quantity of Complementary Feeding With Stunting Among Toddler in Puru Village, Suruh District, Trenggalek Regency <i>Ana Nur Filiya, Adenix Putri Ultasari, Novy Ardyanti Putri, Aulia Afifah</i>	8
The Meaningfulness of Village Shamans in Dayak Communities in the Care of Adolescent Pregnancy: Indonesia <i>Legawati, Riny Natalina</i>	14
What Family Determinants Are Associated With the Duration of Hallucinatory Disorders in the City of Surabaya, East Java, Indonesia? <i>Andrei Ramani, Jayanti Dian Eka Sari, Riris Diana Rachmayanti, Aninditya Ardhana Riswari, Diansanto Prayoga, Syifa'ul Lailiyah</i>	22
Application of the Communication for Behavioural Impact (COMBI) Method to the Stunting Phenomena in Pamekasan Regency <i>Sherly Jeniawaty, Yuni Ginarsihl, Queen Khoirun Nisa Mairo, Luthfi Rusyadi</i>	27
Stroke Risk Factors Based on The Framingham Stroke Risk Score Among Urban vs Rural Elderly Communities <i>Abdulloh Machin, Shafira Putri Widiawan, Achmad Lefi, Mohammad Saiful Ardhi, Nadya Husni, Mochammad Wijdan Rosyich</i>	35
The Influence of Hormonal Contraceptive Risk Factors on the Incidence of Preeclampsia <i>Teta Puji Rahayu, Aning Rezki Murtanti, Sunarto</i>	42
The Factors Associated with Injury Risk in Toddlers <i>Retno Puji Hastuti, Musiana Musiana</i>	47
Food Safety Compliance During Food Delivery: Food Riders Knowledge, Attitude, and Risk Perception <i>Norfezah Md Nor, Nur Zahirah Nizam, Nadia Liana Mohd Karim, Nadiatul Syima Mohd Shahid, Amir Heberd Abdullah, Dominikus Raditya Atmaka, Trias Mahmudiono</i>	53
The Effect of Red Spinach Juice on Increasing Hemoglobin Levels in Third Trimester Pregnant Women with Anemia, Palangka Raya Indonesia <i>Riny Natalina, Legawati</i>	58
Integrated Early Warning System for High-risk Pregnant Woman: Development of Management Information System Between PHC and Hospital <i>Syifa'ul Lailiyah, Diansanto Prayoga, Jayanti Dian Eka Sari, Siti Nuraini, Panji Kusuma Prasetyanto</i>	64
Comparative Study of the Performance of Skin Disease Detection Algorithms on Visible Light and Infrared Images <i>Hariyadi Fajar Nugroho, Nurgiyatna</i>	70
Factors Associated With Coping Mechanisms on Compliance With <i>Diabetes mellitus</i> Patients at the Katobu Community Health Center, Muna Regency 2023 <i>Junaidin Junaidin, Abdurachman Abdurachman, I Ketut Sudiana</i>	79
Effect of Kapok Flower Honey (<i>Ceiba pentandra</i>) Addition on Antioxidant Activity, Total Flavonoid, Total Phenolic, and Lactose Levels in Goat's Milk Kefir <i>Angga Hardiansyah, Ibnu Malkan Bakhrul Ilmi, Avliya Quratul Marjan, Yessi Crosita Octaria, Karina Ana Saputri, Khodijah, Darmuin</i>	85
Assessing Foodservice Management: A Study of Social Homes in Palangka Raya, Indonesia <i>Dhini Anden, Munifa, Resna Maulia, Abdullah Al Mamun</i>	91

Digitization of KIA Books Using a Human Centered Design Approach to Improve Maternal and Child Health <i>Rizki Amalia, Yunik Windarti, Uliyatul Laili, Fauziyatun Nisa, Diah Indriani, Lutfi Agus Salim</i>	99
Strengthening National Health Insurance With Ideal Regulations on the Distribution of Foods Containing Sugar, Salt, and Fat to Prevent Obesity and Non-communicable Diseases in Children <i>Arief Budiono, Rizka, Wardah Yuspin, Heru Santoso Wahito Nugroho, Queen Khoirun Nisa Mairo, Ayesha Hendriana Ngestiningrum, Abdurahman Wahid, Sholahuddin Al-Fatih, Yasir Sidiq, Said Saidakhrarovich Gulyamov, Turdaliev Mukhammad Ali Polatjon Ogli, Indah Maulani</i>	104
The Effect of Giving Zinc Tablets as a Companion Iron Tablets on Haemoglobin Levels in Female Adolescent <i>Rani Safitri, Mohamed Saifulaman, Rifzul Maulina, Zainal Alim</i>	115
Experience and Perceptions of Self-disclosure Among People Living With HIV (PLHIV): A Qualitative Study <i>Forman Novrindo Sidjabat, Nurhayati Adnan Prihartono, Sayhrizal Syarif, Rita Damayanti, Silvia Ambarwati</i>	120
The Use of <i>Camellia sinensis</i> to Lower Neuron Specific Enolase Level in Acute Ischemic Stroke <i>Abdulloh Machin, Putri Irsalina, Isti Suharjanti, Mochammad Wijdan Rosyich, Mohammad Fata Fatihuddin, Djoko Agus Purwanto, Anny Hanifah, Beom Joon Kim, Nadya Husni</i>	128
Correlation of Stroke Risk Factor With Outcome in Non-thrombolysis Acute Ischemic Stroke Patients <i>Muhammad Ja'far Shodiq, Abdulloh Machin, Erdi Khalida Putra</i>	133
Analysis of Total Lactic Acid Bacteria (LAB) and Organoleptic Quality of Goat Milk Kefir With the Addition of Kapok Honey (<i>Ceiba pentandra L.</i>) <i>Ibnu Malkan Bakhrul Ilmi, Angga Hardiansyah, Avliya Quratul Marjan, Yessi Crosita Octaria, Muhammad Mukhlis Saputra, Fitri Susilowati</i>	139
Impact of Micronutrient Supplementation on Hemoglobin, Ferritin, and Retinol Status in Stunting Children Under 5 years in Urban Poor Regions <i>Rifzul Maulina, Rosyidah Alfitri, Waifti Amalia</i>	145
Environmental Risk Determinants Associated With Stunting in Children in Tasikmalaya, Indonesia: A Public Health Surveillance-based Retrospective Studies <i>Cecep Heriana, Merissa Laora Heryanto, Fera Riswidautami Herwanda, Nita Nur Latifa</i>	150
The Effect of Using Bellywrap on Changes in Low Back Pain Levels in Pregnant Women in Menganti District, Gresik Regency <i>Fauziyatun Nisa, Wiwik Afridah, Muslikha Nourma Rhomadhoni, Nurul Fatmawati</i>	155
Effectiveness of Training for Cadres in Stunting Prevention Efforts in the Bangkalan District Area <i>Queen Khoirun Nisa Mairo, Sherly Jeniawaty</i>	159
Social Determinant of Health on Exclusive Breastfeeding Practice in South Sumatra, Indonesia <i>Nur Alam Fajar, Esti Sri Ananingsih, Kiki Sulaningsi, Mela Firdaust, Ririh Yudhastuti, Riris Diana Rachmayanti, Mohammad Zen Rahfiludin</i>	163
Determinants of Waste-sorting Practice of Rural Households <i>Khuliyah Candraning Diyanah, Andhini Aurelia Putri, Nuzulul Kusuma Putri, Aditya Sukma Pawitra, Lilis Sulistyorini, Izzuki Muhashonah, Rahayu Putri Utami, R. Azizah</i>	170
Identification of Risk Factors for the High Prevalence of Hypertension Among Farm Workers in the Agro Industry Area Jember <i>Ida Srisurani Wiji Astuti, Angga Mardro Raharjo, Arsyzilma Hakiim, Eny Nurmaida, Lukman Oktadianto</i>	176
The Effect of Mozart's Music, Kitaro Instruments, and Spiritual Music on Menopausal Depression <i>Rahayu Sumaningsih, Ayesha Hendriana Ngestiningrum, Teta Puji Rahayu, Apfia Mutiara Kasih</i>	181
Supporting and Inhibiting Factors of Implementation of Dengue Control in East Kalimantan: A Qualitative Study <i>Juhairiyah, Muhammad Rasyid Ridha, Ayunina Rizky Ferdina, Nita Rahayu, Annida, Jumriadi, Misna Tazkiah</i>	186
Mental Health Screening and Its Correlation to Academic Self-efficacy Among Public Health Students <i>Adistha Eka Noveyani, Meilinda Alya' Putri Haryanik, Wahyu Efita, Dian Yudhita Sari</i>	195

Lesson From Indonesia National Healthcare Security (BPJS Kesehatan): HIV/AIDS Patient Medical Data Protection Policies <i>Arief Budiono, Alan Siti Nurriszky, Fahmi Fairuzzaman, Said Saidakhrarovich Gulyamov, Andria Luhur Prakoso, Wardah Yuspin, Achmad Miftah Farid, Turdialiev Mukhammad Ali Polatjon Ogli</i>	201
Acceptability of A Stuntingmeter Digital Ultrasonic: A Mixed Methods Approach <i>Tri Siswati, Bunga Astria Paramashanti, Lukman Waris, Nanik Setiyawati, Agus Wijanarka, Muhammad Primiaji Rialihanto</i>	209
Effect of Supportive Group Therapy on Depression in Elderly Individuals With Hypertension <i>Sri Endriyani, Marta Pastasari1, Erna Erawati, Sawab Sawab</i>	216
SYSTEMATIC REVIEW	
Scoping Review of Midwives' Workload: A Comprehensive Overview <i>Niken Bayu Argaheni, Rufidah Maulina, Septiana Juwita, Ida Ayu Setyarini</i>	221
Comparison of STEMI Management and Outcomes in Asia and Europe Before and During the Covid-19 Pandemic: A Meta-analysis <i>Paulus Parholong Siahaan, Pandit Bagus Tri Saputra, Ariikah Dyah Lamara, Hotmauli Siahaan, Makhyan Jibril Al Farabi, Yudi Her Oktaviono, Atsushi Mizuno</i>	231
REVIEW ARTICLE	
Neonatal Thyroid-stimulating Hormone Test as Prevention of Congenital Hypoteroids in Newborn: Review <i>Suhariyadi, Museyaroh</i>	240
Climate Change Due to Mobility Restrictions During the Pandemic Covid-19: A Review <i>Dicky Andiarsa, Aditya Sukma Pawitra, Khuliyah Candraning Diyanah, Chrisna Nur Hadyandiono, Firman Cahyo Nugroho, Putri Ziha Nabihah, Zainul Amiruddin Zakaria, Nuzulul Kusuma Putri</i>	246
Mapping Global Research Related to User Acceptance of Technology in Healthcare: A Scientometric Review <i>Umi Khoirun Nisak, Cholifah, Aditiawardana, Arief Hargono, Hari Basuki Notobroto</i>	254
The Concept of the Legal Protection of Stem Cell Use Based on Prophetic Norms <i>Rizka, Kiara Hanna Quincilla, Arief Budiono, Muchamad Iksan, Nuria Siswi Enggarani, Turdialiev Mukhammad Ali Polatjon Ogli, Heru Santoso Wahito Nugroho</i>	261
STUDY PROTOCOL	
Study Protocol: A Mixed-methods Study to Develop and Validate a Questionnaire of Self-management and Its Relationship With Quality of Life Among Thalassemia Adolescents <i>Siti Munirah Abdul Wahab, Siti Khuzaimah Ahmad Sharoni, Wan Ismahanisa Ismail, Noor Shafina Mohd Nor</i>	268

ORIGINAL ARTICLE

Identification of Risk Factors for the High Prevalence of Hypertension Among Farm Workers in the Agro Industry Area Jember

Ida Srisurani Wiji Astuti¹, Angga Mardro Raharjo¹, Arsyzilma Hakiim¹, Eny Nurmaida¹, Lukman Oktadianto²

¹ Department of Public Health, Medical Faculty of University of Jember, 68121 Jember, East Java, Indonesia

² Department of Pediatric, Subandi Hospital-Medical Faculty of University of Jember, 68111 Jember, East Java, Indonesia

ABSTRACT

Introduction: The prevalence of hypertension among farmers/farm workers in Indonesia has reached 36.1%. Many studies have been conducted on hypertension's causes and risk factors in farmers/farm workers. However, each agro-industrial area has its characteristics, so it is essential to recognize these problems to find solutions. This study aims to identify problems related to risk factors that cause hypertension in agricultural workers in Jember Regency.

Materials and methods: This research is an observational analytical research. The target population is the agro-industrial community, especially those who work in the agromedical field, namely agricultural workers. Determining the sample size in this study used total sampling, namely 64 agricultural workers with hypertension based on medical record data at the community health center. The research instrument is a questionnaire with structured interviews. The data analysis test that will be used in this research is the chi-square test to analyze the relationship hypertension risk factors in farm workers.. The data had been collected from various risk factors that can determine the prevalence of hypertension in farm workers, such as smoking, obesity, high fat intake, excessive alcohol intake, high salt intake, and ignorance. **Results:** From the statistical test results of the six variables, only two variables had high significance values ($\alpha < 0.05$). High salt intake ($\alpha = 0.045$) and ignorance factor ($\alpha = 0.027$) are those variables. **Conclusion:** The conclusion in this study is that the risk factors that cause the high prevalence of hypertension in farmers are factors of high sodium intake and ignorance.

Malaysian Journal of Medicine and Health Sciences (2024) 20(SUPP9): 176-180. doi:10.47836/mjmhs20.s9.29

Keywords: Hypertension, Agroindustry worker, Farmer, Agroindustry area, Risk factor, Community

Corresponding Author:

Ida Srisurani Wiji Astuti, M.Kes
 Email: rani.fk@unej.ac.id
 Tel: +6281357484568

INTRODUCTION

Basic Health Research (*Riskesdas*) results in 2018 showcases that 36.1% of Indonesian farmers/farm workers suffer from hypertension. This figure is unsurprising because, in the same year, 33.7% of hypertension occurred in rural communities where agricultural labor communities live. Other research on farm workers shows that hypertension is a non-communicable disease suffered by the majority of farmers in Indonesia (1,2).

Research on morbidity rates among farmers found that the percentage of grade 1 and 2 systolic hypertension was 25.1%, and grade 1 and 2 diastolic hypertension was 35.8%. This figure reveals a pattern of vulnerability to suffering from hypertension. Another research on farmers in the agro-industrial area of Jember Regency

found that 57 out of 100 farmers suffered from hypertension. Many things can influence this. Apart from environmental factors, hypertension can be caused by behavior that risks increasing blood pressure, such as consumption patterns, emotional stress, smoking habits, and obesity (3,4,5). The proportion of hypertension sufferers in this farmer occupational group is relatively high compared to other occupations (6,7).

Mumbulsari District is \pm 20 kilometers from the government center of Jember. The landscape consists of highlands surrounded by hills, as shown on the map. Most of it is agricultural and plantation land (8). From a health perspective, this district has most farmers which is hypertension is one of the diseases suffered by society, especially farmers and agricultural workers (9).

This research set out to determine problems related to risk factors that cause hypertension in agricultural workers in Jember Regency. It is pretty reasonable; according to the contours of the Mumbulsari District area, the majority of the population's livelihood is agrarian laborers. This is proven by data from Central Statistics Agency (BPS),

declare Mumbulsari District is one of the national food provider Districts (10).

The food commonly consumed by farm workers tends to be salty with high sodium content. Increased sodium in the blood will attract intracellular fluid so that its volume increases. The heart will work harder to pump blood throughout the body even though the blood vessels have limited volume, resulting in hypertension (11,12). The results found that the frequency of consumption of foods high in sodium (biscuits, salted fish, milk and dairy products, coffee and seasonings (Monosodium glutamate) was related to the incidence of systolic hypertension, while tea consumption was associated with the incidence of diastolic hypertension (13).

The data states that an increase in the adrenaline hormone due to the nicotine content in cigarettes can stimulate growth in heart rate of 10 to 20 times per minute. As a result of the increase in heart rate, blood pressure also increases 10 to 20 times (1).

Many studies state that there is a relationship between obesity and hypertension. Someone who is obese tends to have a higher risk of developing hypertension. The presence of obesity in hypertension sufferers also determines the severity of hypertension (14,15).

A cohort study in America found the effect of fat intake on the incidence of hypertension. The study was conducted on thousands of adult and middle-aged women with normal blood pressure at the start of the study. The type of fat consumption determines the level of hypertension. A positive correlation with hypertension is shown by consumption of trans fatty acids, saturated fatty acids and monounsaturated fatty acids. Factors that trigger an increase in hypertension are strengthened if the respondent has diabetes, high BMI and hypercholesterolemia. On the other hand, polyunsaturated fatty acids did not show a significant correlation with increasing respondents' blood pressure (16).

Farm workers often suffer from disease or health problems without realizing it. The main risk of farm workers experiencing health problems is that many do not attend school or have low education. These factors are the cause of the low level of knowledge of farm workers to implement healthy lifestyle behaviors. One

of the health problems experienced by many agricultural workers is hypertension (17).



Figure 1: The Map of Geographical Landscape of Mumbulsari Subdistrict

MATERIALS AND METHODS

Study design and population

This research is observational analytical research. The research stages include determining the population, sample size, and data collection and analysis. The target population is the agro-industrial community, especially those who work in the agromedical field, namely agricultural workers.

Sample and data collection

Determining the sample size in this study used total sampling, namely 64 agricultural workers with hypertension based on medical record data at the Mumbulsari health center who met the inclusion criteria. The research location was the Mumbulsari health center and several villages where the respondents lived.

Technique for measuring data

The research instrument is a questionnaire with structured interviews. The questionnaire contains 50 questions related to socio-demographic data, family, knowledge about awareness, treatment and control of hypertension. The data analysis test that will be used in this research is the chi-square test.

Ethical clearance and informed consent

This research has gone through a review process by the ethics team with number 1.630/H25.1.11/KE/2022. Based on this ethical review, this research is feasible to carry out. Respondents have been given an explanation

in the form of informed consent before interview was conducted.

RESULTS

Based on Table I shows that characteristics of respondents based on their marital status, the majority are married with a percentage of 73%. As many as 16% of respondents did not know their marital status. 5% of respondents were widowed, 3% were in other categories, 2% were divorced, and 1% were single.

Table I: Socio-demographic characteristics

Parameter	Percentage
Marital status	
Single	1%
Married	73%
Divorce	2%
Widowe	5%
Others	3%
Unknown	16%
Education level	
Unknown	34%
Emelentary school	55%
Junior high school	5%
Senior high school	3%
Others	3%
Work skills	
Good	97%
Unkskills	3%
Unknown	0%
Family income	
< 1 million	59%
1 – 3 million	40%
> 3 million	1%

The education level of respondents is dominated by elementary school graduates (55%). 34% of respondents have never attended school. 5% of respondents have a junior high school education, 3% of respondents are high school graduates, and 3% have other education (courses, pursuing packages, etc.).

The characteristics of respondents based on their work skills, almost all respondents admitted they were skilled at work (97%). Only 3% do not know that they are skilled workers. Respondents' work skills were recognized based on expertise in the work process on agricultural land for generations.

The characteristics of respondents based on their, as many as 59% of respondents had incomes below the (Regional Minimum Wage) for Jember Regency in 2022, 2.3 million monthly rupiah. 40% of respondents have a gain of 1-3 million per month, and the rest have an income above 3 million per month (1%). Based on the

research data, there are more respondents had incomes below the 2.3 million monthly rupiah than respondents with incomes above the 2.3 million monthly rupiah.

Statistical Analysis Test

Based on Table II, the high salt intake variable significantly correlates with the incidence of stage 1 and stage 2 hypertension with a p-value (0.045). The results of the study show that high salt intake can increase the risk of hypertension stages 1 and 2. The lower the salt intake, the smaller the risk of hypertension.

Table II: Statistical Test of the High Salt Intake Variable

		High Salt Intake		Total
		None	Exist	
Stage	1	19	11	30
	2	13	21	34
Total		32	32	64

The Table III states a significant correlation between the hypertension and knowledge variables 'don't know' with a p-Value (0.027). The factor of respondents' ignorance about hypertension influences the increase in the incidence of hypertension. The higher the respondent's knowledge, the higher the respondent's awareness so that the incidence of hypertension can decrease.

Table III: Statistical Test for Don't Know Variables

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.916 ^a	1	.027
Continuity Correction ^b	3.805	1	.051
Likelihood Ratio	4.974	1	.026
Fisher's Exact Test			
Linear-by-Linear Association	4.840	1	.028
N of Valid Cases	64		

DISCUSSION

Respondents in this study consisted of 51 women and 13 men. Data on respondent characteristics include marital status, education level, work skills, and family income. Most agricultural workers with hypertension have married partners. The relationship between marital status and hypertension is still unclear. Research found that marital status did not significantly correlate with the incidence of hypertension. By the fact that some marriages are happy, some are not. People can even get married and then divorce and find happiness in a relationship that is not tied to marriage. The number of postponed weddings has increased recently (18).

The level of education is still the main problem in educating agricultural workers regarding the prevention of hypertension. Most agricultural workers only graduated from elementary school (55%). Previous research showed that the majority of agricultural workers in Panti District had elementary school education and this resulted in a lack of knowledge in controlling

blood pressure and the food consumed every day (1). Before being given educational counselling, of the 194 respondents, 106 farm workers needed a better level of knowledge about preventing hypertension. After counselling, only 14 farm workers had poor knowledge, and the rest had good knowledge (19).

Work skills are closely related to a family's income level. It is known that income is correlated with the incidence of hypertension. So, the work skills variable indirectly influences hypertension's morbidity and mortality rates. Research at the Port of Semarang found that male gender and type of work were risk factors for hypertension (20).

Family income determines the purchasing and consumption power of a family. People with below-average incomes will need help to meet their secondary and tertiary needs. Socioeconomic Status (SES) has been proven to be related to the incidence of hypertension. As a developing country with a lower per capita income than developed countries, Indonesia still struggles to meet people's living needs. Low purchasing power means healthy food consumption patterns are less accessible to some people. A good diet determines the prevention of hypertension (21). This statement is supported by research conducted in developing countries which has proven to be experiencing an increase in the incidence of hypertension due to a lack of awareness of hypertension prevention (22).

This research collected data on various risk factors that can determine the prevalence of hypertension in farm workers, such as smoking, obesity, high fat intake, excessive alcohol intake, high salt intake, and ignorance. From the statistical test results of the six variables, only two variables had high significance values ($\alpha < 0.05$). These two variables are high salt intake and the ignorance factor.

High salt intake has long been known to trigger hypertension. Salt has the property of retaining fluid, so consuming excess salt or eating salted foods can cause an increase in blood pressure (23). Farm workers tend to like savoury and salty foods. Apart from salt, the source of sodium is obtained by agricultural workers from the use of monosodium glutamate (MSG). Almost every type of farm worker's cooking in Jember adds this ingredient to enhance the taste of the food. 98 out of 100 agricultural workers routinely use MSG when cooking (14).

The ignorance factor is a variable that can be changed, so it is essential to carry out further intervention. It is because knowledge determines respondents' behavior preventing hypertension, including controlling blood pressure and managing a good diet. Most farm workers in Jember have a medium level of expertise (43.1%) (17,22). Research conducted in Ghana, hypertension sufferers were caused by respondents' ignorance regarding hypertension so that respondents did not know

that their behavior could increase the risk of developing hypertension (25).

Research Limitations

This study did not include other variables that could be risk factors for hypertension in agricultural workers, such as the use of pesticides and duration of work. The reason for not having these two variables is the diversity of respondents. Respondents are agricultural laborers from various agricultural products such as rice, corn and tobacco growers, so pesticide use and work duration vary between respondents. Apart from that, this study also did not examine the correlation between coffee consumption and psychological stress on the prevalence of hypertension.

CONCLUSION

The variables that correlate with hypertension in this study are high sodium intake and the respondent's ignorance factor. Farm workers tend to like savoury and salty foods. The source of sodium is obtained by agricultural workers from the use of monosodium glutamate. The ignorance factor is a variable that can be changed, most farm workers in Jember have a medium level of expertise.

ACKNOWLEDGEMENT

Thank you to LP2M Jember University for providing research grant funding. The Jember District Health Service and the Mumbulsari Community Health Center have provided support through medical record data and the opportunity to participate in activities carried out by the Mumbulsari Community Health Center.

REFERENCES

1. Andriani I. Description of salt consumption among hypertensive farmers in the working area of the Jember Regency Community Health Center. *Jurnal Citra Keperawatan*. 2019;8(1):30–7. doi:10.31964/jck.v8i1.127
2. Andriani ADS, Susanto T, Rasni H, Susumaningrum LA, Siswoyo S. Relationship between lifestyle and the incidence of hypertension in farmers in the working area of the Panti Health Center, Jember district. *Jurnal Citra Keperawatan*. 2021;9(1):48–60. doi:10.31964/jck.v9i1.129
3. Cai A, Nie Z, Ou Y, Wang J, Chen Y, Lu Z, et al. Association between sociodemographic status and cardiovascular risk factors burden in community populations: implication for reducing cardiovascular disease burden. *BMC Public Health*. 2022;22(1):1–11. doi:10.1186/s12889-022-14374-4
4. Aristi DLA, Rasni H, Susumaningrum LA, Susanto T, Siswoyo S. Relationship between Consumption of Foods High in Sodium and the Incident of

- Hypertension in Farm Workers in the Working Area of the Panti Health Center, Jember Regency. *Buletin Penelitian Sistem Kesehatan*. 2020;23(1):53–60. doi:10.22435/hsr.v23i1.2741
5. Astuti ISW. Correlation Analysis of Food Consumption Pattern that Induced Hypertension on Farmer in Rural Areas of Jember Regency. *Journal of Agromedicine and Medical Sciences*. 2017;3(3):7. doi: 10.19184/ams.v3i3.6056
 6. Benjamin EJ, Blaha MJ, Chiuve SE, Cushman M, Das SR, Deo R, et al. Heart Disease and Stroke Statistics'2017 Update: A Report from the American Heart Association. Vol. 135, *Circulation*. 2017. 146–603 p. doi: 10.1161/cir.0000000000000530
 7. Dell'Osbel RS, Santos R, Piccoli C, Gregoletto ML de O, Freire C, Cremonese C. Prevalence of overweight and obesity and increased risk for cardiovascular disease and associated factors in farming families in southern Brazil. *Brazilian Journal of Development*. 2023;9(1):1252–70. doi: 10.34117/bjdv9n1-087
 8. Hartanti MP, Mifbakhuddin. Several factors related to the incidence of hypertension in farmers. *Jurnal Kesehatan Masyarakat Indonesia*. 2015;10(1):2015. doi: 10.26714/jkmi.v10i1.2375
 9. Alyssandra Afqorina Agung, Yuli Hermansyah, Angga Mardro Raharjo, Jauhar Firdaus, Pipiet Wulandari. Relation between Hypertension Knowledge and Behavior with Blood Pressure on Hypertensive Farm Workers in Mumbulsari Public Health Center Working Area. *Jember Medical Journal*. 2023;2(1):26–42. doi: 10.19184/jmj.v2i1.283
 10. Badan Pusat Statistik Jember. Mumbusari District in Figures [Internet]. Jember; 2023. Available from: <https://jemberkab.bps.go.id/publication/2023/09/26/b544ec80c00e8c5be1723fe5/kecamatan-mumbulsari-dalam-angka-2023.html>
 11. Istiqomah IN, Azizah LN. Prevalence and Risk Assessment of Hypertension in Farmers in Community Health Center Working Areas. *Jurnal Keperawatan*. 2022;14(S1):179–88. doi: 10.32583/keperawatan.v14iS1.77
 12. Kharisyanti F, Farapti F. Socioeconomic Status and the Incidence of Hypertension. *Media Kesehatan Masyarakat Indonesia*. 2017;13(3):200. doi: 10.30597/mkmi.v13i3.2643
 13. Kemenkes RI. Hasil Riset Kesehatan Dasar Tahun 2018. Kementrian Kesehatan RI. 2018;53(9):1689–99.
 14. Mamasoliev NS, Tursunov JK, Tursunov KK, Saidkhojaeva J. Epidemiology of Risk Factors of Arterial Hypotension. *World Bulletin of Public Health (WBPH)*. 2023;19(2):204–13. Available from: <https://scholarexpress.net/index.php/wbph/article/view/2206>
 15. Oktaviarini E, Hadisaputro S, Suwondo A, Setyawan H. Several Risk Factors for Hypertension in Employees in the Port Perimeter Area (Case Control Study at the Semarang Class II Port Health Office). *Jurnal Epidemiologi Kesehatan Komunitas*. 2019;4(1):35. doi: 10.14710/jekk.v4i1.4428
 16. Prihartono NA, Fitria L, Ramdhan DH, Fitriyani F, Fauzia S, Woskie S. Determinants of Hypertension amongst Rice Farmers in West Java, Indonesia. *International Journal of Environmental Research and Public Health*. 2022;19(3). doi: 10.3390/ijerph19031152
 17. Sa'diyah SH. The Relationship between Knowledge Level and Diet Behavior in Farmers with Hypertension Incidence in Panti District, Jember Regency. Available from: <https://repository.unej.ac.id/handle/123456789/102419>
 18. Saftarina F, Saftarina F. Women Farmers Group as Peer Educator in Prevent Hypertension. *Majalah Kedokteran Sriwijaya*. 2022;54(3):112–7. doi: 10.32539/mks.v54i3.18765
 19. Tiara UI. Hubungan Obesitas dengan Kejadian Hipertensi. *Jurnal Stikes Siti Hajar*. 2020;2(2):167–71. doi: 10.35893/jhsp.v2i2.51
 20. Wang L, Manson JE, Forman JP, Gaziano JM, Buring JE, Sess HD. Dietary Fatty Acids and the Risk of Hypertension in Middle Aged and Older Women. *National Institutes of Health*. 2010;23(1):1–7. doi: 10.1161/HYPERTENSIONAHA.110.154187
 21. Lu X, Lin Z, Yang J. The epidemiological investigation of hypertension in northern Henan Province. *medRxiv*. 2023;1–9. doi: 10.1101/2023.07.19.23292918
 22. Schutte AE, Srinivasapura Venkateshmurthy N, Mohan S, Prabhakaran D. Hypertension in Low- and Middle-Income Countries. *Circulation Research*. 2021;128(7):808–26. doi: 10.1161/CIRCRESAHA.120.318729
 23. Nurhikmawati, Syatirah AR, Hasta IH, Widusawan, Fattah N. Karakteristik Faktor Risiko Hipertensi di Makassar. *Indonesian Journal of Health [Internet]*. 2020;1(1):53–73. Available from: <http://citracendekiacelebes.org/index.php/INAJOH>
 24. Santoso T, Rasny H, Kurdi F, Yunanto RA, Rahmawati I. Management of Hypertension Using a Plant-Based Diet Among Farmers: Protocol for a Mixed Methods Study. *JMIR Res Protoc*. 2023;3(12). doi: 10.2196/41146
 25. Bernard S, Addison O, Christopher A, Patrick Tetteh A, Mavis Deladem N. Knowledge, Attitude and Lifestyle Practices Pertaining to Hypertension among the People of Ahoé-Ho. *Journal of Hypertension and Management*. 2021;7(1):6–11. doi: 10.23937/2474-3690/1510061