Jurnal Keperawatan
Volume 18 Nomor 1, Maret 2026
e-ISSN 2549-8118; p-ISSN 2085-1049
https://journal3.stikeskendal.ac.id/index.php/keperawatan

RISK FACTORS FOR HYPERTENSION AMONG HEALTH WORKERS IN BANYUASIN: A LITERATURE REVIEW

Reza Yudistiara*, Rico Januar Sitorus, Najmah
Universitas Sriwijaya, Jl. Srijaya Negara, Bukit Lama, Ilir Barat I, Palembang, Sumatera Selatan 30139. Indonesia
*rezayudhistiara1@gmail.com

ABSTRACT
Hypertension is a non-communicable disease that commonly occurs among health workers who have high workloads and exposure to various risk factors. This study aims to identify risk factors for hypertension among health workers through a literature review. This study used a literature review method, searching articles in PubMed, Scopus, ScienceDirect, Google Scholar, and the Garuda and Neliti portals. The search was conducted using keywords related to healthcare workers, hypertension, and risk factors using Boolean operators. Inclusion criteria included full-text articles, written in Indonesian or English, published between 2020 and 2025, and examining risk factors for hypertension in healthcare workers. Of the 94 identified articles, the title-abstract selection process, full-text assessment, and duplication checking resulted in 10 articles for analysis. The review showed that age, body mass index (BMI), central obesity, and low physical activity were the most consistent factors associated with hypertension. Behavioral factors such as high sodium intake, unhealthy diet, and poor sleep quality among shift workers also contributed. Some studies highlighted the role of elevated blood glucose levels as a metabolic factor increasing blood pressure. Hypertension among health workers is influenced by a combination of individual, behavioral, metabolic, and occupational factors; therefore, prevention efforts should focus on workplace-based interventions.

Keywords: banyuasin; hypertension; health workers; literature review; risk factors

INTRODUCTION
Chronic diseases are long-term conditions that cause disability and require ongoing care. One of the major chronic diseases is hypertension, often referred to as *the silent killer* because it frequently occurs without specific symptoms. Hypertension is defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg (Rahmawati et al., 2024). In Indonesia, the prevalence of hypertension reached 34.11% in 2023, placing Indonesia among the top five countries with the highest number of hypertension cases worldwide. The main contributing factors to hypertension include unhealthy diet and lifestyle, such as smoking, excessive alcohol consumption, and low physical activity. Additionally, hypertension may result from poor lifestyle habits, inadequate diet, and poor sleep quality (Survey Kesehatan Indonesia, 2023). The main factors contributing to the development of hypertension are an unhealthy diet and poor lifestyle habits, such as smoking, excessive alcohol consumption, and low levels of physical activity (Yulia et al., 2025). In addition, hypertension can occur due to several risk factors such as unhealthy lifestyle habits, poor dietary patterns, and inadequate sleep quality (Yana et al., 2023). This highlights the role of body mass index (BMI) and central obesity among military personnel (Kusumarahmawati et al., 2023). Meanwhile, it adds the perspective that BMI, body fat percentage, and physical activity are associated with blood glucose levels in adolescents, which indirectly contribute to the risk of hypertension (Lisnawati et al., 2023).

In South Sumatra Province, hypertension cases have shown a significant increasing trend: from 645,104 cases in 2020 to 2,068,423 cases in 2023. Banyuasin Regency ranks as the third-highest area after Palembang City and Lahat Regency (Dinas Kesehatan Provinsi Sumatera Selatan, 2023). Based on data from the Banyuasin District Health Office, out of 620,839 individuals aged over 15 years, 166,031 people suffer from hypertension, with a prevalence of 26.76%, meaning nearly 1 in 3 adults is affected (Profil Dinas Kesehatan Kabupaten Banyuasin, 2024). At the regional level, Banyuasin Regency faces similar challenges. The Free Health Check Program (PKG), which is one of the national priority programs based on the Minister of Health Decree Number HK.01.07/MENKES/33/2025, is used as a means of comprehensive non-communicable disease (NCD) screening conducted systematically using a life-cycle approach. PKG data are collected in a standardized manner and include clinical variables such as blood pressure, body mass index (BMI), waist circumference, blood glucose levels, as well as data on health behaviors and physical activity. This program provides an

overview of the current health status of health workers in Banyuasin Regency and serves as an important source of information for identifying hypertension risk in this population (Kemenkes RI, 2025).

Health workers have unique risk characteristics. High workloads, shift work patterns, occupational stress, lack of sleep, and unhealthy lifestyles can increase the likelihood of developing hypertension. Study (Rahayuni et al., 2024) found that increasing age, low physical activity, and higher body mass index (BMI) are significantly associated with increased blood pressure. Another study by (Defianna et al., 2021) showed that age, sex, and central obesity are significant risk factors for hypertension. On the other hand, empirical evidence indicates that health workers are often an overlooked group in hypertension prevention programs, despite being at the forefront of healthcare services. However, there is still a lack of literature reviews that specifically summarize the risk factors for hypertension among health workers, particularly in local contexts such as Banyuasin Regency. Based on these issues, this study was conducted to provide a comprehensive overview of hypertension risk factors among health workers through a literature review approach, so that it can serve as a scientific basis for developing more effective and targeted strategies for hypertension prevention and control in Banyuasin Regency.

METHOD

This study employed a *literature review* method by collecting, comparing, and synthesizing relevant research findings to obtain a comprehensive overview of hypertension risk factors among health workers. Data were collected through online literature searches in international databases (PubMed, Scopus, ScienceDirect, and Google Scholar) as well as national databases (Garuda and Neliti). This study used secondary data derived from published scientific articles. The search strategy utilized a combination of keywords with Boolean operators: “health workers” OR “health personnel” AND “hypertension” AND “risk factors”, as well as their Indonesian equivalents. The inclusion criteria were: full-text articles, published in Indonesian or English, within the period of 2020–2025, and discussing hypertension risk factors among health workers. The exclusion criteria included irrelevant articles, duplicates, and articles without empirical data. The initial search identified 94 articles, consisting of PubMed (n = 68), Google Scholar (n = 17), and Garuda/Neliti (n = 9). The selection process was conducted through title and abstract screening, followed by full-text assessment and duplicate removal. Data were analyzed descriptively using a narrative approach to identify and summarize hypertension risk factors among health workers.

RESULT

Study Selection

The article selection process was carried out through several systematic stages. After limiting the publication period to 2020–2025, a total of 94 articles were identified in the initial stage from all databases. The first stage involved title and abstract screening, resulting in 60 articles considered relevant to the topic of hypertension risk factors among health workers. Of these, 22 articles were excluded due to lack of empirical data, being editorial or opinion articles, or not specifically focusing on health worker populations. The eligibility assessment was then conducted through full-text review, resulting in 38 articles that met the initial criteria. Subsequently, duplication checks, contextual suitability, and relevance to hypertension risk factors among health workers were performed. At the final stage of the selection process, 10 articles were identified as the most relevant and met all inclusion criteria to be included in this literature review.

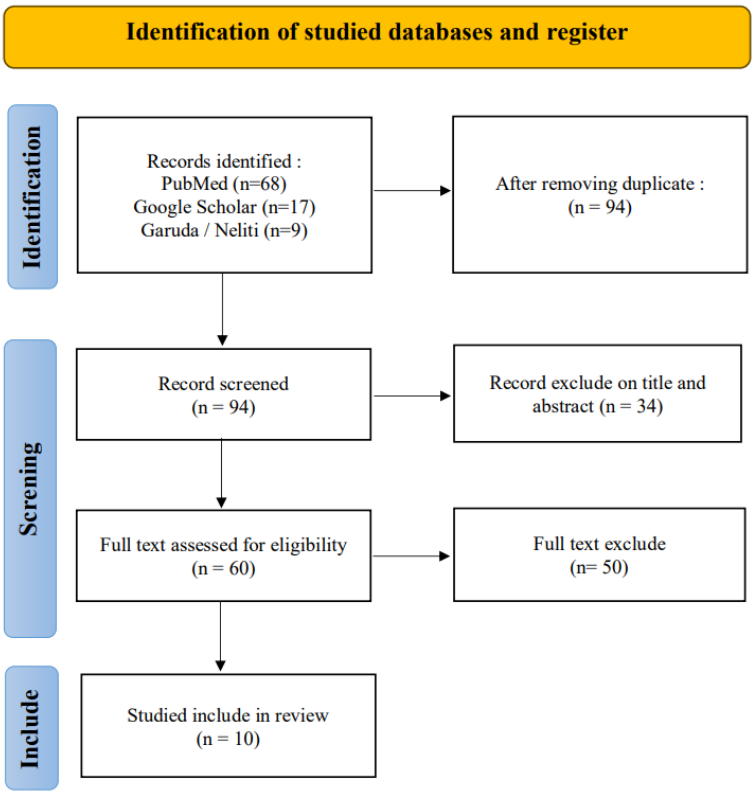

Diagram 1. Flow Diagram PRISMA

Table 1.
Analysis of Selected Article Summary

No	Research Title	Author(s), Source, and Year	Study Design	Variables		Results
				Independent	Dependent	
1.	Risk Factors Associated with Hypertension among Health Workers in South Lampung, 2024	(Rahmawati et al., 2024) Portal Jurnal Malahayati	*Cross-Sectional*	Smoking, fruit consumption, vegetable consumption, physical activity, sex, age	Incidence of hypertension	Bivariate analysis showed no significant association between smoking habits, fruit consumption, vegetable consumption, physical activity, sex, or age and the incidence of hypertension ($p > 0.05$). The study concluded that although the prevalence of hypertension was relatively high (45.9%, including pre-hypertension and hypertension), no single dominant factor was identified. Smoking, physical activity, age, and sex acted as confounding factors in the occurrence of hypertension
2.	Case-Control Study of Risk Factors for Hypertension among Employees of the Governor's Office in Banda Aceh, 2022	(Yana et al., 2023) Media Publikasi Promosi Kesehatan Indonesia	*Case-Control*	Physical activity, waist circumference, smoking, body mass index (BMI)	Hypertension	Bivariate analysis showed significant associations between physical activity and hypertension ($p = 0.001$; OR = 0.01–0.04), waist circumference ($p = 0.001$; OR = 0.07–0.30), smoking ($p = 0.001$; OR = 8.5), and BMI ($p = 0.001$; OR = 1). The most dominant factor associated with hypertension was

No	Research Title	Author(s), Source, and Year	Study Design	Variables		Results
				Independent	Dependent	
						smoking, with an odds ratio 8.5 times higher.
.	Analysis of Factors Affecting Blood Pressure among Mining Operator Workers in Tenggarong Seberang	(Ismiati, 2021), Jurnal Kesehatan: *Caritas et Fraternitas*	*Cross-Sectional*	Age, obesity, cholesterol levels	Blood pressure (hypertension)	Statistical analysis showed that age (p = 0.042), cholesterol levels (p = 0.017), and obesity (p = 0.032) were significantly associated with hypertension. The study concluded that hypertension was more commonly found among young adult mining workers with obesity and high cholesterol levels.
4.	The Relationship between Body Mass Index and Blood Pressure among Hypertensive Patients at the Cardiology Clinic of Husada Utama Hospital, Surabaya	(G. M. Sari et al., 2023), Prima Wiyata Health	*Cross-Sectional*	Body mass index (BMI)	Blood pressure	Correlation analysis showed a significant relationship between body mass index (BMI) and blood pressure (p = 0.000), with a strong correlation (r = 0.629). The study concluded that proper BMI management is essential in preventing increased blood pressure and reducing the risk of non-communicable diseases; therefore, weight control is an integral part of hypertension management.
5.	The Relationship between Body Mass Index and Central Obesity with Blood Pressure among Battalion X Personne	(Kusumarah mawati et al., 2023), Jurnal Fisioterapi Terapan Indonesia	*Cross-Sectional*	Body mass index (BMI), central obesity	Blood pressure (systolic and diastolic)	There was a significant association between BMI and central obesity with blood pressure (p < 0.05). The correlation values were: BMI–systolic blood pressure (r = 0.293), BMI–diastolic blood pressure (r = 0.431), central obesity–systolic blood pressure (r = 0.433), and central obesity–diastolic blood pressure (r = 0.390).
6.	Risk Factors for Hypertension in the Working Area of Balla Health Center, Mamasa	(Abidin et al., 2022) (Abidin et al., 2022), *Journal Peqguruang: Conference Series (JPCS)*	*Case-Control*	Smoking, family history, obesity	Incidence of hypertension	Bivariate analysis showed that family history was significantly associated with hypertension (p < 0.05; OR ≈ 0.158). Smoking and obesity were not associated with hypertension. The study concluded that hypertension was more commonly found among individuals with a family history of hypertension.
7.	Prevalence and Analysis of Hypertension Risk Factors in the Working Area of Nanggalo Health Center, Padang	(Astuti et al., 2021), Berkala Ilmiah Mahasiswa Ilmu Keperawatan Indonesia	*Cross-Sectional*	Age, sex, body mass index (BMI), physical activity, smoking, saturated fat consumption	Hypertension	Bivariate analysis showed significant associations with hypertension for age (p = 0.000), BMI (p = 0.018), and physical activity (p = 0.054). Meanwhile, no significant associations were found for sex (p = 0.796), smoking (p =

No	Research Title	Author(s), Source, and Year	Study Design	Variables		Results
				Independent	Dependent	
						0.781), and saturated fat consumption (p = 0.176).
8.	Factors Associated with Hypertension in Adults	(Ekarini et al., 2020), ResearchGate	*Cross-Sectional*	Age, overweight/body mass index (BMI), physical activity, and other behavioral factor	Hypertension	Bivariate analysis showed that the most dominant variable was age (p = 0.009–0.014; OR ≈ 2.9). Overweight/BMI and physical activity acted as confounding variables in the model
9.	Analysis of Factors Influencing the Incidence of Hypertension	(Fiana & Indarjo, 2024), *Higeia Journal Of Public Health Research And Development*	*Cross-Sectional*	Age, sex, education, occupation, lifestyle, obesity	Hypertension	Bivariate analysis showed that age (p = 0.001) and education (p = 0.001) were significantly associated with hypertension, while other variables were not significant.
10.	The Risk Factors of Hypertension in Indonesia	(Khasanah, 2022), *JPH RECODE*	*Cross-Sectional*	Sex, age, education, occupation, smoking, physical activity, obesity, stress	Hypertension	Bivariate analysis using the chi-square test showed that factors significantly associated with hypertension were sex (p = 0.000), age (p = 0.000), employment status (p = 0.003), physical activity (p = 0.011), and obesity (p = 0.000).

DISCUSSION

The synthesis of ten previous studies indicates that hypertension among health workers is influenced by a combination of individual, metabolic, behavioral, and occupational factors. The most consistently identified factors are age, body mass index (BMI), and central obesity, as several studies have shown that increasing age, excess body weight, and the accumulation of abdominal fat significantly increase the risk of (Defianna et al., 2021; Rahayuni et al., 2024)). This finding is consistent with physiological mechanisms that describe decreased vascular elasticity and increased vascular resistance with advancing age and increased body fat mass.

In addition, low physical activity is also an influential factor, as several studies have shown that a sedentary lifestyle increases the risk of hypertension through reduced cardiovascular fitness and metabolic disturbances (Astuti et al., 2021; Ekarini et al., 2020). Other behavioral factors such as smoking, high sodium intake, and unhealthy dietary patterns have shown varying results across studies; however, studies such as (Vinola, 2023) confirm that high sodium intake remains an important factor that increases the risk of hypertension. In the occupational context, several studies indicate that work-related stress and poor sleep quality contribute to increased blood pressure, particularly among health workers with shift work patterns. These findings support that sleep duration is associated with blood pressure, highlighting the relevance of this factor for health workers (Enjelia et al., 2024; Marhamah, 2025; Nurbaiti et al., 2026).

Overall, this review confirms that hypertension risk factors among health workers result from a complex interaction between metabolic, behavioral, and occupational factors. Therefore, prevention efforts should not only focus on behavioral modification and nutritional status but also on improving the work environment, stress management, and more comprehensive workplace health promotion (I. A. Sari et al., 2025; Midu & Astrid, 2024; Sugiarti et al., 202).

CONCLUSION

Based on the review of ten previous studies, it can be concluded that hypertension among health workers is influenced by a combination of individual, behavioral, metabolic, and occupational factors. The most consistent factors associated with an increased risk of hypertension are age, body mass index (BMI), central obesity, and low physical activity. Several studies also highlight the role of behavioral factors such as high sodium intake and poor sleep quality, particularly among health workers with shift work patterns. Overall, hypertension in health workers is a multifactorial condition resulting from the interaction between lifestyle, metabolic status, and work-related demands.

REFERENCE

Abidin, U. W., Liliandriani, A., & Suryani. (2022). *Faktor Risiko Kejadian Hipertensi Di Wilayah Kerja Puskesmas Balla Kecamatan Balla Kabupaten Mamasa Sulawesi Barat*. *4*(September 2021).

Astuti, V. W., Tasman, & Amri, L. F. (2021). *Prevalensi*. *9*(1), 1–9.

Defianna, S. R., Santosa, A., Probandari, A., & Dewi, F. S. T. (2021). Gender differences in prevalence and risk factors for hypertension among adult populations: A cross-sectional study in indonesia. *International Journal of Environmental Research and Public Health*, *18*(12). https://doi.org/10.3390/ijerph18126259

Dinas Kesehatan Provinsi Sumatera Selatan. (2023). *Profil Kesehatan Prov Sumsel 2023*.

Ekarini, N. L. P., Wahyuni, J. D., & Sulistyowati, D. (2020). Faktor - Faktor Yang Berhubungan Dengan Hipertensi Pada Usia Dewasa. *Jkep*, *5*(1), 61–73. https://doi.org/10.32668/jkep.v5i1.357

Enjelia, W., Syarif Hamidi, M. N., & Erlinawati, E. (2024). Hubungan Durasi Tidur Dengan Tekanan Darah Pada Penderita Hipertensi Di Desa Tarai Bangun Wilayah Kerja Upt Puskesmas Tambang. *Jurnal Ilmiah Ilmu Kesehatan*, *2*(3), 552–558. https://doi.org/10.31004/jiik.v2i3.32894

Fiana, F. K. F., & Indarjo, S. (2024). Faktor-Faktor yang Memengaruhi Kejadian Hipertensi. *Fakumi Medical Journal: Jurnal Mahasiswa Kedokteran*, *4*(8), 572–278. https://doi.org/10.33096/fmj.v4i8.490

Ismiati, T. T. (2021). Analisis Faktor Yang Mempengaruhi Tekanan Darah Karyawan Operator Tambang Di Tenggarong Seberang. *Jurnal Keperawatan Dirgahayu (JKD)*, *3*(2), 18–23. https://doi.org/10.52841/jkd.v3i2.199

Kemenkes RI. (2025). *Petunjuk Teknis Pemeriksaan Kesehatan Gratis Hari Ulang Tahun Nomor HK.01.07/Menkes/33/2025*. 1–96.

Khasanah, D. N. (2022). the Risk Factors of Hypertension in Indonesia (Data Study of Indonesian Family Life Survey 5). *Journal of Public Health Research and Community Health Development*, *5*(2), 80. https://doi.org/10.20473/jphrecode.v5i2.27923

Kusumarahmawati, A., Mailani, R., & Sirada, A. (2023). Indeks Massa Tubuh Dan Obesitas Sentral Kaitannya Dengan Tekanan Darah Pada Anggota Batalyon X. *Jurnal Fisioterapi Terapan Indonesia*, *2*(2). https://doi.org/10.7454/jfti.v2i2.1091

Lisnawati, N., Kusmiyati, F., Herwibawa, B., Kristanto, B. A., & Rizkika, A. (2023). Indeks Massa Tubuh. *Journal of Nutrition College*, *12*(2), 168–178.

Marhamah, F. (2025). *Hubungan Beban Kerja Dan Stress Kerja Dengan Tekanan Darah Pada Perawat Diruang ICU Rumah Sakit Persahabatan*. *04*(09), 345–355.

Midu, S. Y., & Astrid, M. (2024). *Faktor-Faktor yang Mempengaruhi Kejadian Hipertensi pada Pekerja : Literature Review*. *7*(3), 637–647.

Nurbaiti, Adawiah, R., Nurhalimah, & Fitri, A. M. (2026). *Promosi Gaya Hidup Sehat Bagi Pekerja Shift : Intervensi Berbasis Pengaturan Jadwal Tidur dan Manajemen Tekanan Darah di PT X*. *3*(11), 6144–6152.

Profil Dinas Kesehatan Kabupaten Banyuasin. (2024). *Kesehatan 2024*.

Rahayuni, M. D., Sifai Izzatul Alifah, & Pramitasari, R. (2024). Mutiara Dwi Rahayuni, 2024. *Journal Occupational Health Hygiene And Safety*, *2*(1), 222–236.

Rahmawati, R., Farich, A., Sari, N., Muhani, N., & Putra, A. P. (2024). *Faktor Risiko Yang Berhubungan Dengan Hipertensi Pada Tenaga Kesehatan Di Lampung Selatan Tahun 2024 Rizka*. (February), 4–6.

Sari, G. M., Kurniawan, E. V., Puspita, E., & Amalia, S. D. (2023). Hubungan Indeks Massa Tubuh Dengan Tekanan Darah Pada Penderita Hipertensi Di Poli Jantung Rumah Sakit Husada Utama Surabaya. *Prima Wiyata Health*, *4*(1), 47–63. https://doi.org/10.60050/pwh.v4i1.39

Sari, I. A., Safei, I., & Ikram, D. (2025). *Literature Review : The Effect Of Work Stress On The Risk Of Hypertension*. *16*(01), 489–501. https://doi.org/10.54209/eduhealth.v16i01

Sugiarti, F., Kurniawati, L. M., & Susanti, Y. (2021). *Scoping Review : Hubungan Stres Kerja dengan Hipertensi pada Tenaga Kesehatan Departemen Ilmu Kesehatan Masyarakat , Fakultas Kedokteran , Universitas Islam Bandung Relationship of Job Stress with Hypertension in Health workers : Scoping Review Abstract*. *3*(1), 41–47.

Survey Kesehatan Indonesia. (2023). Survei Kesehatan Indonesia 2023 (SKI). *Kemenkes*, 235.

Vinola, J. (2023). Faktor Yang Berhubungan Dengan Kejadian Hipertensi Di Wilayah Kerja Puskesmas Tomoni Timur Kabupaten Luwu Timur. *File:///C:/Users/MyPC/Downloads/PDF HIPERTENSI.Pdf*.

Yana, P. R., Tahara Dilla Santi, Farrah Fahdhienie, & Dharina Baharuddin. (2023). Case Control Study Faktor Risiko Kejadian Hipertensi pada Pegawai Kantor Gubernur Aceh Kota Banda Aceh Tahun 2022. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, *6*(9), 1827–1834. https://doi.org/10.56338/mppki.v6i9.3605

Yulia, M., Juliana, & Fitria, U. (2025). Hubungan Pola Makan, Gaya Hidup Dan Peran Keluarga Dengan Kejadian Hipertensi. *British Medical Journal*, *7*(5474), 698.