

Hypertension Prevalence and Associated Factors among Male Persons Deprived of Liberty in a Philippine Jail Facility

Henri Aureleus P. De Guia¹, Fatima A. Carsola²

<https://orcid.org/0009-0008-0098-419X>¹, <https://orcid.org/0009-0000-9607-3738>²

St. Bernadette of Lourdes College¹, Union Christian College²

hdegua@sblc.edu.ph¹, Ucc.edu.ph²

ABSTRACT

This study determined the prevalence of hypertension and examined its associated socio-demographic, detention-related, health-related, and jail environmental factors among male persons deprived of liberty in a selected Philippine jail facility. A quantitative descriptive cross-sectional research design was employed involving 360 respondents selected through proportionate stratified cluster random sampling. Data were collected using a validated questionnaire, blood pressure measurements, and anthropometric assessment. Hypertension was classified according to the American Heart Association blood pressure classification based on the participants' final blood pressure reading. Descriptive and inferential statistics were used to analyze the data at the 0.05 level of significance. The findings revealed that 43.1% of the respondents were classified as hypertensive. Significant associations were found between hypertension and age, educational attainment, length of current detention, number of detentions, family history of hypertension, smoking frequency, smoking duration, physical activity, and sleep conditions.

Keywords: Hypertension, prevalence, associated factors, persons deprived of liberty, Philippine jail facility.

INTRODUCTION

Persons deprived of liberty experience poorer health outcomes than the general population because of restricted living conditions, overcrowding, environmental stressors, limited access to healthcare, and pre-existing socioeconomic disadvantages that increase vulnerability to chronic diseases such as hypertension. Often referred to as the “silent killer,” this condition frequently progresses without noticeable symptoms, leaving many individuals unaware of their condition until complications develop (WHF, 2021; WHO, 2023). International studies have consistently reported a considerable burden of hypertension among incarcerated populations (Camplain et al., 2021; Agu et al., 2023; Virginie et al., 2024; Xavier et al., 2025). In the Philippines, the number of persons deprived of liberty increased from 94,691 in 2015 to 165,528 in 2021, representing an increase of almost 75% (UNODC, 2023). Despite this growing population, local evidence regarding hypertension among persons deprived of liberty remains limited.

Statement of the Problem

The study was guided by the following research questions:

1. What is the prevalence of hypertension among male persons deprived of liberty in a Philippine jail facility?
2. What are their socio-demographic, detention-related, health-related, and jail environmental factors?
3. Is hypertension significantly associated with these socio-demographic, detention-related, health-related, and jail environmental factors?

Scope and Delimitations

This study was limited to male persons deprived of liberty housed in a selected Philippine Jail Facility. As such, the findings may not be generalizable to female PDL or to other jail facilities with different population characteristics and institutional conditions. Furthermore, data were collected at a single point in time in 2026 from 360 randomly selected participants. Due to the cross-sectional design, temporal and causal relationships between hypertension and the associated factors cannot be established. Furthermore, the analysis was restricted to a predefined set of variables from the structured questionnaire, which may not capture all factors associated with hypertension in the study population.

Review of Related Literature

Hypertension is one of the most common non-communicable diseases among incarcerated populations. Studies conducted in Mozambique, Benin, Nigeria, Brazil, and Pakistan have reported hypertension prevalence ranging from 24.8% to 55.55% among persons deprived of liberty (Serra et al., 2022; Virginie et al., 2024; Agu et al., 2023; Osunkwo et al., 2025; Ramos et al., 2022; Xavier et al., 2025; Jamil et al., 2025). Previous studies have likewise identified age, educational attainment, duration of incarceration, family history of hypertension, smoking, body mass index, physical activity, sleep, healthcare access, diet, and stress as factors associated with hypertension among incarcerated individuals (Himwaaba, 2021; da Silva et al., 2022; Leal et al., 2023; Abukari et al., 2024; Machado et al., 2025; Silva et al., 2023; Silva et al., 2024).

Theoretical Framework

This study is anchored in Betty Neuman's Systems Model, Florence Nightingale's Environmental Theory, and Dorothea Orem's Self-Care Deficit Theory. Collectively, these nursing theories provide a theoretical foundation for understanding hypertension among male persons deprived of liberty by recognizing the role of socio-demographic, detention-related, health-related, and jail environmental factors on health outcomes. The theories guided the selection, organization, and interpretation of the study variables.

Conceptual Framework

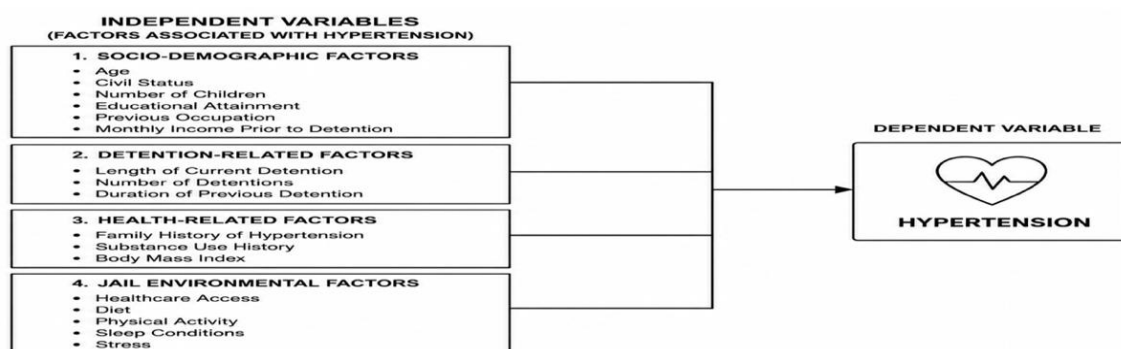


Figure 1. Conceptual Framework Showing the Factors Associated with Hypertension among Male Persons Deprived of Liberty

METHODOLOGY

This section describes the research design, sampling procedure, data collection methods, statistical analyses, and ethical considerations employed in conducting the study.

Research Design

This study employed a quantitative descriptive cross-sectional research design. Data were collected at a single point in time to determine the prevalence of hypertension and

examine its association with selected factors without manipulating the study variables or implementing any intervention.

Research Steps

This study commenced with a review of the relevant literature to establish the research framework and to identify factors associated with hypertension among male persons deprived of liberty. Following the development and validation of the research instrument, ethical approval and institutional permissions were obtained prior to data collection. Eligible participants were selected through proportionate stratified cluster random sampling. Data collection involved administering a validated questionnaire, measuring blood pressure, and conducting anthropometric assessments. The collected data were then encoded, processed, and analyzed using appropriate descriptive and inferential statistical methods.

Data Collection and Sample Selection

A total of 360 male persons deprived of liberty were selected through proportionate stratified cluster random sampling from a selected Philippine jail facility. Eligible participants were biologically male, aged 18 years and older, officially committed to the facility, and medically and mentally capable of providing informed consent. Individuals confined to disciplinary cells or those scheduled for immediate transfer or release were excluded. Information was collected using a validated questionnaire, and blood pressure was measured with a calibrated OMRON HEM-7111 digital blood pressure monitor, following standard procedures. Height and weight were likewise measured to determine body mass index.

Data Analysis Methods

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the respondents' characteristics, hypertension prevalence, and jail environmental factors. Inferential statistics, including the Chi-square test of independence, were performed at the 0.05 level of significance to examine the association between hypertension and the selected socio-demographic, detention-related, health-related, and jail environmental factors.

Research Hypotheses and Validation

This study tested the null hypotheses that there were no significant associations between hypertension and the study variables among male persons deprived of liberty in a Philippine jail facility. The findings led to the rejection of the null hypotheses for the factors that showed statistically significant associations with hypertension.

Study Limitations and Ethical Considerations

Standardized procedures and validated instruments were employed to promote the accuracy and consistency of data collection. Nevertheless, the findings should be interpreted within the context of the study. Ethical principles were strictly observed throughout the research by obtaining approval from the appropriate ethics review board and institutional authorities prior to data collection. Written informed consent was obtained from all participants, and confidentiality, anonymity, voluntary participation, and the right to withdraw from the study at any time without penalty were ensured.

RESULTS AND DISCUSSION

The findings revealed that 155 (43.1%) of the 360 male persons deprived of liberty were classified as hypertensive according to the American Heart Association blood pressure

classification, based on participants' final blood pressure readings, whereas 205 (56.9%) were classified as not hypertensive. The respondents were predominantly 31–45 years old (39.0%), single (48.6%), had one to two children (35%), and had a high school education (55.8%). Prior to detention, 49.0% were employed, and most reported a monthly income below ₱12,000 (63.1%). Most respondents had been detained for less than one year (68.0%) and were first-time detainees (54.0%). Family history of hypertension was most commonly absent (24.0%), followed by a paternal history (20.0%). The majority had a normal body mass index (59.0%), while smoking of 1–5 cigarettes per day (48.6%), occasional alcohol consumption (63.0%), and drug use (50.0%) were common. For the jail environmental factors, sleep conditions ($M = 2.59$, $SD = 1.04$) and physical activity ($M = 2.50$, $SD = 1.00$) were perceived as occurring often, whereas diet ($M = 2.32$, $SD = 0.82$), stress ($M = 1.98$, $SD = 0.95$), and healthcare access ($M = 1.94$, $SD = 0.94$) were perceived as occurring sometimes. Continuous and uninterrupted sleep at night ($M = 2.92$, $SD = 1.06$) received the highest mean score, whereas regular blood pressure monitoring ($M = 1.77$, $SD = 0.85$) received the lowest.

Hypertension was significantly associated with age ($r = 0.365$, $p < 0.001$), educational attainment ($r = 0.171$, $p = 0.013$), length of current detention ($r = 0.145$, $p = 0.021$), number of detentions ($r = 0.120$, $p = 0.022$), family history of hypertension ($r = 0.189$, $p = 0.039$), smoking frequency ($r = 0.210$, $p = 0.002$), smoking duration ($r = 0.209$, $p = 0.002$), physical activity ($r = -0.137$, $p = 0.009$), and sleep conditions ($r = -0.172$, $p = 0.001$). No significant associations were observed for the remaining variables.

SUMMARY

The study revealed that 43.1% of the respondents were classified as hypertensive. The respondents were predominantly middle-aged, single, had one to two children, had completed high school, reported monthly incomes below ₱12,000 prior to detention, and had been detained for less than one year. Most had a normal body mass index, while smoking and occasional alcohol and drug use were commonly reported. The respondents perceived physical activity and sleep conditions as occurring often, whereas healthcare access, diet, and stress were perceived as occurring sometimes. Significant associations were identified between hypertension and age, educational attainment, length of current detention, number of detentions, family history of hypertension, smoking frequency, smoking duration, physical activity, and sleep conditions.

CONCLUSIONS

The findings demonstrate that hypertension constitutes a significant health concern among male persons deprived of liberty in the selected Philippine jail facility. The presence of significant associations across socio-demographic, detention-related, health-related, and jail environmental factors indicates that hypertension is influenced by multiple interrelated factors rather than a single determinant.

RECOMMENDATIONS

Based on the study's findings, routine blood pressure screening and cardiovascular health monitoring should be strengthened for male persons deprived of liberty to facilitate early identification and management of hypertension. Health promotion initiatives focused on smoking cessation, regular physical activity, and healthy sleep practices may be enhanced within jail operations and healthcare services. Future studies may include multiple jail facilities, female persons deprived of liberty, and longitudinal or analytical research designs to further examine hypertension and its associated factors among the PDL populations.

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AI DECLARATION STATEMENT

The authors used artificial intelligence (AI)-assisted writing tools to support language refinement, grammar, sentence structure, and manuscript organization during the preparation of this article. AI was not used in the study design, data collection, statistical analysis, interpretation of results, or formulation of the study findings. The authors reviewed, verified, and take full responsibility for the accuracy, originality, and integrity of the manuscript.

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