LIFESTYLE PRACTICES AND CARDIOVASCULAR RISK FACTORS AMONG NURSES IN POLICE SERVICE

[1]Macsille Jr B. Subong , RN

[1]Davao Doctors College
macsillejrsubong@gmail.com

Abstract : This study examined the relationships between lifestyle practices and cardiovascular risk factors among 58 personnel assigned to a police medical and dental unit in Region XI. Using a descriptive-predictive design and total enumeration, data were collected from August to September 2026 through an adapted WHO STEPwise instrument and authorized medical records covering the preceding three months. Findings showed very low smoking, low alcohol consumption, moderate dietary habits, high physical activity, and moderate sedentary behavior. Cardiovascular risk was evident: 56.9% had elevated or hypertensive blood pressure, 68.9% had above-normal BMI, 68.3% of males had increased or high waist-circumference risk, and 70.59% of females had high or very high risk. Sex was significantly associated with lifestyle practices, blood pressure, BMI, and waist circumference, whereas age was not. Alcohol consumption and sedentary behavior were positively associated with blood pressure, whereas physical activity was negatively associated with BMI. Alcohol consumption and sedentary behavior significantly predicted blood pressure, explaining 50.21% of its variability. Physical activity and dietary habits negatively predicted BMI, whereas alcohol consumption positively predicted it; the model explained 27.01% of BMI variability. No lifestyle practice significantly predicted waist circumference among males or females. The findings support interventions that reduce alcohol consumption and sedentary behavior while promoting physical activity and healthy dietary habits. Regular cardiovascular screening, sex-responsive programs, movement breaks, nutrition counseling, and risk-factor monitoring are recommended. Future studies should include larger sample sizes and examine biological, occupational, metabolic, reproductive, and psychosocial factors using longitudinal or mixed-methods designs.

Index Terms **- Lifestyle Practices, Cardiovascular Risk Factors, Blood Pressure, Body Mass Index, Waist Circumference, Police Personnel, RMDU XI**

INTRODUCTION

Cardiovascular diseases remain a major public health concern because of their substantial contribution to illness, disability, and premature mortality worldwide. Although cardiovascular conditions result from complex biological, environmental, and clinical influences, much of their burden is associated with modifiable lifestyle practices. Smoking, alcohol consumption, unhealthy dietary habits, insufficient physical activity, and prolonged sedentary behavior may contribute to elevated blood pressure, excess body weight, central obesity, and other cardiometabolic abnormalities (Tsao et al., 2023; World Health Organization, 2023, 2025). These conditions may develop gradually and remain undetected, making early identification and prevention important among working adults. Nurses are particularly vulnerable because long and irregular shifts, demanding responsibilities, fatigue, and limited opportunities for regular meals, exercise, and recovery may compromise their health practices. Alhajaji et al. (2025) found that extended working hours, night shifts, and high job strain were associated with hypertension, ischemic heart disease, and cardiometabolic disorders among healthcare providers.

These concerns are especially relevant to nurses and personnel assigned to police medical and dental units. They deliver clinical, preventive, emergency, and occupational health services within a law-enforcement environment that demands readiness and responsiveness to unpredictable situations. Their responsibilities may include health monitoring, documentation, administrative work, emergency assistance, and operational support. As a result, their work may involve intense physical demands, prolonged sitting, irregular schedules, and limited time for health-promoting activities. Because lifestyle behaviors often coexist and interact, examine smoking, alcohol consumption, dietary habits, physical activity, and sedentary behavior as a group. Healthy lifestyle patterns support cardiovascular function, weight management, and metabolic regulation, whereas repeated exposure to unhealthy behaviors may contribute to hypertension, obesity, and other cardiovascular conditions (Kris-Etherton et al., 2022; Ghodeshwar et al., 2023).

Smoking contributes to cardiovascular risk by promoting oxidative stress, inflammation, endothelial dysfunction, arterial stiffness, and atherosclerosis (Higashi, 2023; Klein et al., 2023; Parmar et al., 2023). Among healthcare professionals, smoking may also be associated with occupational stress, long working hours, night duties, and inadequate coping opportunities (Chaudhary et al., 2025). Similarly, frequent or excessive alcohol consumption has been linked to an increased risk of hypertension (Cecchini et al., 2024). Dietary habits and physical activity are equally important because heart-healthy food choices and regular exercise support blood-pressure regulation, weight management, metabolic health, and cardiovascular function (Patnode et al., 2022; Ghodeshwar et al., 2023; Polyak et al., 2026). Sedentary behavior is a separate concern because individuals may engage in exercise yet still spend extended periods sitting during documentation, meetings, transportation, or leisure. Prolonged sedentary time is associated with unfavorable cardiovascular outcomes, while regularly interrupting sitting with movement may provide cardiometabolic benefits (Duran et al., 2022; Liang et al., 2022; Paterson et al., 2023; O'Brien et al., 2024).

These lifestyle practices may be reflected in blood pressure, body mass index, and waist circumference. Elevated blood pressure increases the risk of heart disease, stroke, heart failure, and other complications, while BMI and waist circumference help identify excess body weight and central adiposity (Tsao et al., 2023; Su et al., 2024; World Health Organization, 2025; Bays et al., 2026; Dardari et al., 2026). Age and sex may also shape lifestyle practices and cardiovascular risk through differences in physiology, body composition, fat distribution, health behaviors, and occupational exposure (Strack et al., 2022; Rajendran et al., 2023). Although multicomponent workplace programs combining dietary improvement, physical activity, behavioral support, health education, monitoring, and feedback may produce better outcomes than isolated interventions, they must reflect the needs of the population they are intended to serve (Zhang et al., 2025; Salem et al., 2026). However, previous research has primarily examined hospital-based healthcare workers, general adult populations, or police personnel separately. Limited evidence is available on nurses and other healthcare personnel serving in police medical and dental units, particularly in the Philippine setting. Few studies have also examined multiple lifestyle practices simultaneously in relation to blood pressure, BMI, and waist circumference or determined whether these practices significantly predict variations in cardiovascular indicators.

To address this gap, this study aimed to determine the relationship between lifestyle practices and cardiovascular risk factors among nurses and personnel assigned to a police medical and dental unit in Region XI. Specifically, it described their demographic characteristics; assessed their smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior; and examined their cardiovascular risk factors in terms of blood pressure, BMI, and waist circumference. It also examined associations between demographic characteristics and lifestyle practices and cardiovascular risk factors, relationships between individual lifestyle practices and cardiovascular indicators, and the ability of these practices to predict blood pressure, BMI, and waist circumference. The study is significant because it provides context-specific evidence that may help personnel recognize modifiable risks, guide healthcare providers in delivering targeted screening and counseling, and help police administrators develop appropriate workplace wellness programs. Its findings may also inform occupational health policies and provide a basis for future longitudinal, mixed-methods, and intervention studies involving police healthcare personnel and other demanding occupational groups.

SIGNIFICANCE OF THE STUDY.

Cardiovascular risk factors may develop gradually and remain undetected even among relatively young and actively employed personnel. Nurses and other personnel assigned to police medical and dental units work within a demanding environment that combines healthcare responsibilities with the operational requirements of police service. Irregular schedules, occupational stress, fatigue, administrative duties, prolonged sitting, and limited opportunities for healthy meals and exercise may affect their smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior. These conditions create a need to examine their lifestyle practices together with objective cardiovascular indicators such as blood pressure, body mass index, and waist circumference.

Although previous studies have examined cardiovascular health among healthcare workers, general adult populations, and police personnel, limited evidence is available on nurses and other healthcare personnel serving within police medical and dental units, particularly in the Philippine setting. Few studies have also assessed multiple lifestyle practices simultaneously and determined whether they significantly predict cardiovascular risk factors in this specialized occupational group. Therefore, the study was needed to provide context-specific baseline evidence for early cardiovascular screening, individualized health counseling, sex-responsive interventions, and comprehensive workplace wellness policies. Its findings may help police administrators and healthcare providers develop appropriate programs that promote healthy eating, regular physical activity, reduced sedentary time, responsible alcohol consumption, smoking prevention, and continuous monitoring of cardiovascular risk.

STATEMENT OF THE PROBLEM

This study aims to determine the relationship between lifestyle practices and cardiovascular risk factors among nurses in the police service. Specifically, it seeks to answer the following questions:

1. What is the demographic profile of the respondents according to:
   - 1.1 Age, and
   - 1.2 Sex?
2. What is the level of lifestyle practices among nurses in the police service in terms of:
   - 2.1 Smoking Behavior
   - 2.2 Alcohol Consumption;
   - 2.3 Dietary Habits;
   - 2.4 Physical Activity; and
   - 2.5 Sedentary Behavior?
3. What are the cardiovascular risk factors among nurses in the police service in terms of:
   - 3.1 Blood Pressure;
   - 3.2 Body Mass Index (BMI); and
   - 3.3 Waist Circumference?
4. Is there a significant association between the demographic profile and the level of lifestyle practices among nurses in the police service?
5. Is there a significant association between the demographic profile and the cardiovascular risk factors among nurses in the police service?

6. Is there a significant relationship between the level of lifestyle practices and cardiovascular risk factors among nurses in the police service?
7. Do lifestyle practices significantly influence the cardiovascular risk factors among nurses in the police service?

HYPOTHESES

This study was tested at the .05 level of significance.

Ho1: There is no significant association between the demographic profile and the lifestyle practices among nurses in the police service.

Ho2: There is no significant association between the demographic profile and the level of cardiovascular risk factors among nurses in the police service.

Ho_3: There is no significant relationship between the level of lifestyle practices and cardiovascular risk factors among nurses in the police service.

Ho_4: The lifestyle practices do not significantly influence the cardiovascular risk factors among nurses in the police service.

RESEARCH METHODOLOGY

Research Design

This study utilized a descriptive-predictive research design, a quantitative approach used to describe existing characteristics, behaviors, and conditions and determine whether selected independent variables significantly predict variations in an outcome without manipulating the study variables or establishing cause-and-effect relationships (Creswell and Creswell, 2023). Specifically, the design described the smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior of uniformed and non-uniformed police personnel, as well as their cardiovascular risk factors in terms of blood pressure, body mass index, and waist circumference. It also examined whether these lifestyle practices significantly predicted cardiovascular risk factors while accounting for age and sex. This design was appropriate because it enabled the researchers to identify relevant patterns and significant predictors that may provide baseline evidence for developing health programs, preventive interventions, and workplace policies for police personnel.

Participants and Sampling Technique

The study population consisted of uniformed and non-uniformed personnel assigned to a police medical and dental unit in Region XI. Using total enumeration sampling, all eligible personnel were invited to participate because the population was manageable and accessible, resulting in an actual sample of 58 respondents. Participants were included if they were officially assigned to the selected unit, actively serving during the data-collection period, willing to participate, and able to provide informed consent. The study excluded personnel on official leave or otherwise unavailable during data collection, as well as those who declined or withdrew. Total enumeration was appropriate because it allowed the researcher to gather comprehensive data from the entire eligible population while minimizing potential sampling bias.

Research Instrument

The study used an adapted structured questionnaire based on the World Health Organization STEPwise Approach to Noncommunicable Disease Risk Factor Surveillance (WHO STEPS Instrument). It included items assessing smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior, rated on a five-point Likert-type scale, along with a recording form for blood pressure, body mass index, and waist circumference obtained from authorized medical records. Three qualified experts content-validated the adapted instrument to ensure the relevance, clarity, and appropriateness of the items. It was also subjected to preliminary reliability testing, which demonstrated acceptable to excellent internal consistency across all domains: smoking behavior (ω = 0.993), alcohol consumption (ω = 0.886), dietary habits (ω = 0.722), physical activity (ω = 0.795), and sedentary behavior (ω = 0.713). These results confirmed that the instrument was sufficiently valid and reliable for measuring the study variables.

Data Gathering Procedure

The researcher conducted face-to-face data collection from August to September 2026 at the selected police medical and dental unit in Region XI. Before data collection, the researcher secured approval of the Matrix of Corrections, obtained ethical clearance from the Ethics Review Committee, and submitted the required documents to the Program Chair of the Master of Arts in Nursing Program. After receiving program endorsement, the researcher submitted a formal request to the selected unit's authorized officials. Upon approval, the researcher coordinated with the unit regarding the appropriate schedule and venue for data collection. All eligible uniformed and non-uniformed personnel were informed of the study's purpose, procedures, voluntary nature, possible risks and benefits, and confidentiality measures. The researcher obtained written informed consent before participation. The researcher personally distributed and administered the adapted WHO STEPS-based questionnaire at a time convenient to participants, provided clear instructions, and allowed sufficient time for independent responses. The questionnaire gathered demographic information and self-reported lifestyle practices during the preceding 30 days, including smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior. After retrieval, the researcher checked each questionnaire for completeness and accuracy. The researcher did not measure cardiovascular risk data directly during questionnaire administration. Instead, with proper institutional and participant authorization, the researcher obtained the recorded average blood pressure, body mass index, and waist circumference measurements for the three months preceding the study from the participants' available medical records. Blood pressure records were expressed in millimeters of mercury, BMI was based on recorded weight and height, and waist circumference was expressed in centimeters. We coded completed responses and authorized physiological records, entered them into a spreadsheet, and organized and verified them for completeness and consistency before statistical analysis. Although the manuscript indicates that the broader study period extended beyond six months, the formal face-to-face data-

gathering period occurred from August to September 2026. The researcher maintained confidentiality by coding data, storing electronic records in password-protected files, restricting access to the researcher, and presenting findings only in aggregate form.

Data Analysis Procedure

The quantitative data were encoded, cleaned, verified, and analyzed using appropriate descriptive and inferential statistical methods at the .05 level of significance. Frequencies and percentages described respondents' age, sex, blood pressure, body mass index, and waist circumference, while the mean and standard deviation summarized smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior. We used the likelihood-ratio chi-square test and Cramér's V to assess the significance and strength of associations between demographic characteristics and lifestyle practices or cardiovascular risk factors. Spearman's rho was used to determine the strength, direction, and significance of the relationships between lifestyle practices and cardiovascular risk factors because the variables were ordinal or not assumed to be normally distributed. We used nonparametric kernel regression with bootstrap standard errors, z-statistics, p-values, and R^2 values to determine whether lifestyle practices significantly predicted blood pressure and BMI. Generalized linear models, with regression estimates, standard errors, 95% confidence intervals, z-statistics, *p*-values, and R^2 values, were used to examine the predictive influence of lifestyle practices on waist circumference separately for male and female respondents. Before analysis, three qualified experts reviewed the adapted questionnaire to establish content validity. Reliability testing using McDonald's omega showed acceptable to excellent internal consistency for smoking behavior (ω = 0.993), alcohol consumption (ω = 0.886), dietary habits (ω = 0.722), physical activity (ω = 0.795), and sedentary behavior (ω = 0.713). Because the study used quantitative data only, qualitative trustworthiness criteria were not applicable; instead, the study supported methodological rigor through expert validation, instrument reliability testing, standardized scoring, data verification, and statistical procedures appropriate to the study variables and research questions.

Ethical Considerations

The study was conducted only after obtaining ethical clearance from the appropriate Ethics Review Committee and formal permission from the authorized officials of the selected police medical and dental unit in Region XI. Before data collection, the participants received a clear explanation of the study's purpose, procedures, possible risks and benefits, and their rights as research participants. The researchers obtained written informed consent, and participation was entirely voluntary, with no penalty for refusing or withdrawing at any stage. Privacy was maintained during face-to-face administration of the questionnaire, and participants could answer independently. To ensure confidentiality, the research database excluded names and other direct personal identifiers and replaced them with assigned codes. Access to medical records, including blood pressure, body mass index, and waist circumference, was limited to authorized data and obtained only with institutional and participant permission. The printed documents were kept in secure storage, while electronic files were password-protected and accessible only to the researcher. The team reported findings in aggregate form to prevent identifying individual participants. The collected data were used solely for research purposes and were handled, retained, and disposed of in accordance with the approved research protocol and applicable institutional data-protection policies.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

The results (see Table 1) showed that most respondents were 30–39 years old, accounting for 48 (82.8%) of the sample, followed by those aged 40–49 years (12.1%), 20–29 years (3.4%), and 50 years and above (1.7%). By sex, most were male (41, 70.7%), while 17 (29.3%) were female. The concentration of respondents in early to middle adulthood does not eliminate cardiovascular vulnerability, as risk factors may gradually develop through sustained exposure to unhealthy behaviors and demanding occupational conditions. Tsao et al. (2023) identified age and sex as relevant demographic considerations in cardiovascular risk assessment, while Alhajaji et al. (2025) reported that prolonged working hours, night shifts, occupational stress, and fatigue may influence the health behaviors and cardiovascular status of healthcare personnel. Moreover, Rajendran et al. (2023) emphasized that sex-related differences in physiology, body composition, health behaviors, and occupational exposure may contribute to variations in cardiovascular risk. These findings imply that personnel assigned to the police medical and dental unit may benefit from early cardiovascular screening and inclusive, sex-responsive workplace programs, including nutrition counseling, regular physical activity, movement opportunities, stress management, and continuous monitoring of modifiable risk factors.

Table 1. *The Demographic Profile of Respondents*

Demographic Profile	Frequency	Percentage
Age:		
20-29 yo	2	3.4
30-39 yo	48	82.8
40-49 yo	7	12.1
50 yo & above	1	1.7
Total	**58**	**100%**
Sex:		
Male	41	70.7
Female	17	29.3
Total	**58**	**100%**

Level of Lifestyle Practices of The Respondents in Terms of: Smoking Behavior; Alcohol Consumption; Dietary Habits; Physical Activity; and Sedentary Behavior

The results (see Table 2) showed that physical activity obtained the highest mean of 3.60 (*SD* = 1.07), interpreted as High. Dietary habits had a mean of 3.13 (*SD* = 0.91), while sedentary behavior obtained a mean of 2.85 (*SD* = 1.02), both interpreted as Moderate. Meanwhile, alcohol consumption was Low (M = 2.18, SD = 1.05), and smoking behavior was Very Low (M = 1.71, *SD*

= 1.21). These findings indicate that the respondents generally maintained favorable physical activity and low levels of smoking and alcohol consumption. However, their moderate dietary habits and sedentary behavior suggest that they did not consistently choose healthy foods and still spent considerable time sitting or doing low-energy activities.

Tsao et al. (2023) emphasized that lifestyle behaviors collectively influence cardiovascular health by affecting blood pressure, body composition, metabolic function, and cardiovascular risk. Similarly, Ghodeshwar et al. (2023) explained that regular physical activity and healthy dietary practices help prevent cardiovascular disease. The findings imply that workplace health programs should sustain the respondents' favorable physical activity and low smoking and alcohol consumption while strengthening nutrition education, providing healthier food options, and encouraging regular movement breaks. Targeted smoking-cessation and alcohol-risk interventions should also remain available because the variation in responses indicates that some personnel may have less favorable lifestyle practices than the group averages suggest.

Table 2. *The Lifestyle Practices among the Respondents*

Indicators	Mean	*SD*	Interpretation
Smoking Behavior	1.71	1.21	Very Low
Alcohol Consumption	2.18	1.05	Low
Dietary Habits	3.13	0.91	Moderate
Physical Activity	3.60	1.07	High
Sedentary Behavior	2.85	1.02	Moderate

Note: 4.21-5.00---Very High ;3.41-4.20---High; 2.61-3.40---Moderate; 1.81-2.60---Low; 1.00-1.80---Very Low; *SD*- Standard Deviation; n=58

Cardiovascular Risk Factors of The Respondents in Terms of: Blood Pressure, Body Mass Index (BMI), And Waist Circumference

The results (see Table 3) revealed that cardiovascular risk factors were already evident among the respondents. Although 43.1% had normal blood pressure, a combined 56.9% had elevated blood pressure, Stage 1 hypertension, or Stage 2 hypertension. In terms of BMI, 53.4% were overweight, while 15.5% were classified under Obesity Classes I and II. Therefore, 68.9% of the respondents had BMI values above the normal range. Waist-circumference findings likewise indicated increased cardiovascular risk among male and female respondents, suggesting central or abdominal adiposity within the study population.

Tsao et al. (2023) explained that elevated blood pressure, excess body weight, and central obesity may coexist and collectively increase susceptibility to cardiovascular disease. Bays et al. (2026) further noted that excess body weight may contribute to hypertension, inflammation, insulin resistance, metabolic abnormalities, and increased cardiovascular workload. These findings imply that cardiovascular assessment should not rely on a single indicator. The police medical and dental unit should therefore conduct regular blood-pressure, BMI, and waist-circumference monitoring, supported by weight-management activities, dietary counseling, physical activity programs, and timely referral of personnel with elevated cardiovascular indicators.

Table 3. *Cardiovascular Risk Indicators of the Respondents in terms of…*

Cardiovascular Risk Indicators	Frequency (*n*=58)	Percentage
Blood Pressure:		
Normal	25	43.1
Elevated	19	32.8
Stage 1 Hypertension	12	20.7
Stage 2 Hypertension	2	3.4
Severe Hypertension	0	0
Hypertensive Emergency	0	0
Total	**58**	**100%**
Body Mass Index:		
Underweight	1	1.7
Normal	17	29.3
Overweight	31	53.4
Obesity (1st Class)	8	13.8
Obesity (2nd Class)	1	1.7
Extreme Obesity	0	0
Total	**58**	**100%**
Waist Circumference (Male):		
No Disease Risk	13	31.70
Increased	23	56.10
High	5	12.20
Total	**41**	**100%**
Waist Circumference (Female):		
No Disease Risk	5	29.41
High	7	41.18
Very High	5	29.41
Total	**17**	**100%**

Note: **Blood pressure was classified according to the American Heart Association (AHA)/American College of Cardiology (ACC) guidelines** as Normal (<120/<80 mmHg), Elevated (120–129 and <80 mmHg), Stage 1 Hypertension (130–139 or 80–89 mmHg), Stage 2 Hypertension (≥140 or ≥90 mmHg), and Severe Hypertension/Hypertensive Emergency (>180 and/or >120 mmHg, with hypertensive emergency distinguished by the presence of associated symptoms). **BMI and waist circumference–associated disease risk were classified using the NHLBI/WHO-based criteria:** Underweight (<18.5 kg/m²), Normal (18.5–24.9 kg/m²), Overweight (25.0–29.9 kg/m²), Obesity Class I (30.0–34.9 kg/m²), Obesity Class II (35.0–39.9 kg/m²), and Extreme Obesity (≥40.0 kg/m²). We defined increased waist circumference as >102 cm (>40 in) for males and >88 cm (>35 in) for females, and interpreted associated disease risk alongside BMI.

Association Between Demographic Characteristics and Lifestyle Practices

The results (see Table 4) showed that age was not significantly associated with lifestyle practices, *LR*(141)=58.270, *p*=1.000. This suggests that smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior did not significantly vary across the respondents' age groups. The nonsignificant result may reflect the limited age variation in the sample, as most respondents were 30–39 years old. Their shared occupational duties, work schedules, and workplace conditions may also have contributed to similar lifestyle patterns across age groups.

In contrast, sex was significantly associated with lifestyle practices, *LR*(3)=64.624, *p*=.045, Cramér's *V*=.957, indicating that lifestyle patterns differed significantly between male and female respondents. Teraž et al. (2022) explained that health-related and environmental factors shape lifestyle behaviors, while Alhajaji et al. (2025) emphasized that occupational stress, fatigue, long working hours, and time constraints may influence healthcare personnel's health practices. Tsao et al. (2023) also recognized sex as an important consideration in understanding differences in health behaviors. These findings imply that workplace interventions should not be differentiated solely according to age but should address unhealthy practices across all age groups. Programs should also be sex-responsive by considering possible differences in smoking, alcohol use, dietary habits, physical activity, and sedentary behavior between male and female personnel. Individual lifestyle assessment, targeted health education, smoking-cessation assistance, nutrition counseling, and accessible physical-activity opportunities may help ensure interventions respond to personnel's specific needs. However, the significant association should not be interpreted as evidence that sex directly causes particular lifestyle practices.

Table 4. *The Test of Association between the Demographic Profile and Lifestyle Practices*

Demographic Profile	Lifestyle Practices					
	LR	*df*	*p*-value	φ_c	Decision	Remarks
Age	58.270	141	1.000	.944	Accept H_{02}	Not Significant
Sex	64.624	3	.045	.957	Reject H_{02}	Significant

Note: p<.05* (Significant); NS- Not Significant; df- degrees of freedom; *LR/G²*- Likelihood Ratio; φ_c – Cramer's V; DV-Lifestyle Practices

Association Between Demographic Characteristics and Cardiovascular Risk Factors

The results (see Table 5) revealed that age was not significantly associated with blood pressure, *LR*(9) = 10.944, *p*=.477; BMI, *LR*(12) = 18.404, *p* = .104; or waist circumference, *LR*(9)=13.891, *p*=.126. This indicates that cardiovascular risk classifications did not differ significantly across respondents' age groups. The lack of significant associations may reflect the concentration of respondents in the 30–39-year age group, which limited the variation needed to detect age-related differences. Nevertheless, the nonsignificant results do not mean that younger personnel are free from cardiovascular risk, particularly because elevated blood pressure, overweight, obesity, and central adiposity were already present in the study population.

Conversely, sex was significantly associated with blood pressure, *LR*(3) = 16.202, *p* = .001, Cramér's V = .512; BMI, *LR*(4) = 10.644, *p* = .031, Cramér's *V*=.426; and waist circumference, *LR*(3) =9.135, *p*= .028, Cramér's *V*=.396. Tsao et al. (2023) and Rajendran et al. (2023) emphasized that sex-related differences in physiological function, body composition, fat distribution, metabolism, and health behaviors may contribute to variations in cardiovascular risk. Bays et al. (2026) likewise identified excess body weight as an important contributor to hypertension, metabolic abnormalities, and cardiovascular disease. These findings suggest that cardiovascular screening should be offered to personnel of all ages rather than limited to older employees. Workplace health services should also apply sex-responsive assessment standards, particularly when interpreting blood pressure, BMI, and waist circumference. Regular monitoring, early referral, individualized weight-management plans, nutrition counseling, and physical-activity programs may help prevent the progression of identified risks. Administrators may also use the findings to develop inclusive occupational-health policies that provide appropriate preventive services for both male and female personnel. However, these statistical associations should not be interpreted as causal relationships.

Table 5. ***The Test of Association between the Demographic Profile and Cardiovascular Risk Factors***

Demographic Profile	*LR*	*df*	*p*-value	φ_c	*Decision*	*Remarks*
			Blood Pressure			
Age	10.944	9	.477	.222	Accept H_{01}	Not Significant
Sex	16.202	3	.001	.512	Reject H_{01}	Significant
			Body Mass Index			
Age	18.404	12	.104	.626	Accept H_{01}	Not Significant
Sex	10.644	4	.031	.426	Reject H_{01}	Significant
			Waist Circumference			
Age	13.891	9	.126	.590	Accept H_{01}	Not Significant
Sex	9.135	3	.028	.396	Reject H_{01}	Significant

Note: p<.05* (Significant); NS- Not Significant; df- degrees of freedom; LR/G²- Likelihood Ratio; φ_c – Cramer's V; DV-Cardiovascular Risk Factors (Blood Pressure, Body Mass Index, Waist Circumference)

Relationship Between Lifestyle Practices and Cardiovascular Risk Factors

Blood Pressure

The results (see Table 6.1) showed that sedentary behavior had the strongest significant positive relationship with blood pressure, r_s=.412, *p*=.001, followed by alcohol consumption, r_s=.404, *p*=.002. These findings indicate that higher levels of sedentary behavior and alcohol consumption were associated with higher blood-pressure classifications. Therefore, the null hypothesis was rejected for these two lifestyle practices. Conversely, smoking behavior had a weak positive but nonsignificant relationship with blood pressure, r_s=.221, *p*=.095, while dietary habits and physical activity both showed negligible negative and nonsignificant

relationships, r_s=−.044, p=.741. The null hypothesis was therefore not rejected for smoking behavior, dietary habits, and physical activity.

The findings are supported by O'Brien et al. (2024), who associated greater sedentary time with unfavorable blood-pressure and cardiovascular outcomes, and Cecchini et al. (2024), who reported that greater alcohol intake increases the risk of hypertension. These findings imply that workplace cardiovascular programs should prioritize reducing prolonged sitting and alcohol consumption through scheduled movement breaks, active work routines, alcohol-risk education, behavioral counseling, and regular blood-pressure monitoring. Although smoking, dietary habits, and physical activity were not significantly related to blood pressure in this sample, they should remain part of comprehensive cardiovascular-health promotion. The significant relationships indicate association rather than causation.

Table 6.1. *The Test of Relationship between Lifestyle Practices and Cardiovascular Risk Factor (Blood Pressure)*

Lifestyle Practices	Blood Pressure			
	r_s	p-value	Decision	Remarks
Smoking Behavior	.221	.095	Accept H_{03}	Not Significant
Alcohol Consumption	.404	.002	Reject H_{01}	Significant
Dietary Habits	-.044	.741	Accept H_{03}	Not Significant
Physical Activity	-.044	.741	Accept H_{03}	Not Significant
Sedentary Behavior	.412	.001	Reject H_{01}	Significant

Note: p<0.05* (Significant); r_s- Spearman's rho; IV- Lifestyle Practices; DV- Cardiovascular Risk Factor (Blood Pressure)

Body Mass Index

The results (see Table 6.2) showed that physical activity was the only lifestyle practice significantly related to BMI, r_s = −.349, p = .007. The negative relationship indicates that respondents with higher physical-activity levels tended to have lower BMI classifications. Hence, the null hypothesis was rejected for physical activity. Smoking behavior, alcohol consumption, dietary habits, and sedentary behavior were not significantly related to BMI; therefore, the null hypothesis was not rejected for these lifestyle dimensions. These findings suggest that physical activity may have a more observable relationship with weight status than the other measured behaviors within the study population.

Table 6.2. *The Test of Relationship between Lifestyle Practices and Cardiovascular Risk Factor (Body Mass Index)*

Lifestyle Practices	Body Mass Index			
	r_s	p-value	Decision	Remarks
Smoking Behavior	-.020	.882	Accept H_{03}	Not Significant
Alcohol Consumption	.102	.446	Accept H_{03}	Not Significant
Dietary Habits	-.185	.163	Accept H_{03}	Not Significant
Physical Activity	-.349	.007	Reject H_{03}	Significant
Sedentary Behavior	.241	.068	Accept H_{03}	Not Significant

Note: p<0.05* (Significant); r_s- Spearman's rho; IV- Lifestyle Practices; DV- Cardiovascular Risk Factor (Body Mass Index)

Polyak et al. (2026) emphasized that regular physical activity supports weight control, energy expenditure, metabolic function, and cardiovascular protection. However, Bays et al. (2026) described obesity as a complex condition influenced by biological, genetic, behavioral, social, and environmental factors. The findings suggest that workplace weight-management programs should offer accessible opportunities for exercise, movement breaks, fitness activities, and active transportation, combined with nutrition counseling and regular BMI monitoring. Personnel with elevated BMI should receive individualized assessment because body weight may also be affected by dietary intake, metabolism, sleep, stress, medication use, health conditions, and occupational demands. The observed relationship should not be interpreted as evidence that physical activity alone directly caused lower BMI.

Waist Circumference Among Male Respondents

The results (see Table 6.3) showed that none of the five lifestyle practices were significantly related to waist circumference among male respondents, since all p-values exceeded .05. Sedentary behavior had the strongest positive relationship, r_s=.189, p=.236, followed by alcohol consumption, r_s=.106, p=.508, although both relationships were weak and nonsignificant. Smoking behavior and dietary habits demonstrated weak negative relationships, while physical activity had a negligible positive relationship with waist circumference. Therefore, the null hypothesis was not rejected for any lifestyle-practice dimension. The negative and positive directions of the nonsignificant coefficients should not be interpreted as protective or harmful effects.

Although no significant relationships emerged, Liang et al. (2022) linked sedentary behavior and physical inactivity to obesity-related outcomes, while Salem et al. (2026) reported that combining dietary modification and structured physical activity produced more consistent reductions in waist circumference when maintained over time. These findings suggest that waist circumference among male personnel should be monitored directly and regularly rather than estimated from lifestyle behaviors alone. Workplace interventions should use a comprehensive approach that includes healthy eating, regular physical activity, reduced sedentary time, responsible alcohol consumption, and smoking cessation. Assessment should also consider caloric intake, genetics, metabolism, sleep, occupational stress, medication use, and existing health conditions that may influence abdominal adiposity.

Table 6.3. *The Test of Relationship between Lifestyle Practices and Cardiovascular Risk Factor (Waist Circumference-Male)*

Lifestyle Practices	Waist Circumference (Male)			
	r_s	*p*-value	Decision	Remarks
Smoking Behavior	-.154	.335	Accept H_{03}	Not Significant
Alcohol Consumption	.106	.508	Accept H_{03}	Not Significant
Dietary Habits	-.149	.354	Accept H_{03}	Not Significant
Physical Activity	.048	.767	Accept H_{03}	Not Significant
Sedentary Behavior	.189	.236	Accept H_{03}	Not Significant

Note: $p<0.05$* (Significant); r_s- Spearman's rho; IV- Lifestyle Practices; DV- Cardiovascular Risk Factor (Waist Circumference-Male).

Waist Circumference Among Female Respondents

The results (see Table 6.4) revealed that none of the lifestyle practices were significantly related to waist circumference among female respondents. Smoking behavior had the strongest positive relationship, r_s=.224, p=.388, followed by physical activity, r_s = .199, p = .444; dietary habits, r_s = .190, p = .465; and alcohol consumption, r_s=.159, p=.541. Sedentary behavior showed a negligible negative relationship, $r_s = -.032$, $p = .904$. Since all p-values were greater than .05, the null hypothesis was not rejected for any lifestyle practice. The small positive coefficients should not be interpreted as evidence that physical activity or healthy dietary practices increase waist circumference because the results were statistically nonsignificant.

The findings show that several interacting factors beyond the lifestyle practices measured in the study may influence female waist circumference. Salem et al. (2026) found that combined, sustained dietary and physical-activity interventions were more effective at reducing waist circumference, while Liang et al. (2022) noted that differences in lifestyle measurements may influence observed associations with obesity-related outcomes. These results imply that female personnel should receive regular waist-circumference monitoring and individualized assessment that considers hormonal and reproductive factors, metabolism, genetics, dietary intake, sleep, stress, medications, and existing health conditions. Workplace programs should continue promoting balanced nutrition, regular physical activity, reduced sedentary time, smoking cessation, and responsible alcohol consumption despite the absence of significant individual relationships.

Table 6.4. *The Test of Relationship between Lifestyle Practices and Cardiovascular Risk Factor (Waist Circumference-Female)*

Lifestyle Practices	Waist Circumference (Female)			
	r_s	*p*-value	Decision	Remarks
Smoking Behavior	.224	.388	Accept H_{03}	Not Significant
Alcohol Consumption	.159	.541	Accept H_{03}	Not Significant
Dietary Habits	.190	.465	Accept H_{03}	Not Significant
Physical Activity	.199	.444	Accept H_{03}	Not Significant
Sedentary Behavior	-.032	.904	Accept H_{03}	Not Significant

***Note*:** $p<0.05$* (Significant); r_s- Spearman's rho; IV- Lifestyle Practices; DV- Cardiovascular Risk Factor (Waist Circumference-Female).

Influence of Lifestyle Practices on Cardiovascular Risk Factors

Blood Pressure

The results (see Table 7.1) showed that the combined lifestyle practices explained 50.21% of the variation in blood pressure (R^2 = .5021), indicating that the model had substantial explanatory capacity. Alcohol consumption significantly and positively predicted blood pressure (Estimate = .412, p = .007), while sedentary behavior also demonstrated a significant positive predictive influence (Estimate = .403, p = .001). Thus, higher alcohol consumption and greater sedentary behavior predicted higher blood-pressure classifications after accounting for the other lifestyle practices. Conversely, smoking behavior, dietary habits, and physical activity did not significantly predict blood pressure. Therefore, the null hypothesis was rejected only for alcohol consumption and sedentary behavior.

These findings are consistent with Cecchini et al. (2024), who reported that increasing alcohol intake was associated with a higher risk of hypertension, and O'Brien et al. (2024), who linked greater sedentary time with unfavorable blood-pressure and cardiovascular outcomes. The findings imply that workplace cardiovascular programs should prioritize alcohol-risk education, behavioral counseling, scheduled movement breaks, active work routines, and regular blood-pressure monitoring. However, because 49.79% of the variation remained unexplained, assessments should also consider age, sex, occupational stress, sleep, medication use, chronic conditions, and family history. Smoking cessation, healthy eating, and physical activity should remain part of comprehensive cardiovascular-health promotion despite their nonsignificant predictive effects in the model.

Table 7.1 The Test of Influence of Lifestyle Practices on Cardiovascular Risk Factor (Blood Pressure)

BP	Observed Estimate	Bootstrap SE	*Z*	*p*-value	Decision	Remarks
Mean BP	1.794	0.109	16.450	0.000		
Effect						
SB	0.046	.133	0.350	.729	Accept H_{04}	Not Significant
AC	0.412	.153	2.700	.007	Reject H_{04}	Significant
DH	-0.140	.176	-0.790	.429	Accept H_{04}	Not Significant
PA	-0.016	.129	-0.130	.899	Accept H_{04}	Not Significant
SED	0.403	.125	3.230	.001	Reject H_{04}	Significant

Note: p<.05* (Significant); R^2= 0.5021; IV- Lifestyle Practices (SB-Smoking Behavior; AC- Alcohol Consumption; DH-Dietary Habits; PA- Physical Activity; SED- Sedentary Behavior); DV- Cardiovascular Risk Factor (Blood Pressure

Body Mass Index

The results (see Table 7.2) revealed that the lifestyle practices collectively accounted for 27.01% of the variation in BMI (R^2 = .2701). Physical activity had the strongest significant negative predictive influence on BMI (Estimate = −.333, p = .001), followed by dietary habits (Estimate = −.284, p = .014), indicating that greater physical activity and healthier dietary practices predicted lower BMI classifications. In contrast, alcohol consumption significantly and positively predicted BMI (Estimate = .197, p = .040). Smoking behavior and sedentary behavior did not significantly predict BMI. Accordingly, the null hypothesis was rejected for physical activity, dietary habits, and alcohol consumption but was not rejected for smoking and sedentary behavior.

Table 7.2. The Test of Influence of Lifestyle Practices on Cardiovascular Risk Factor (Body Mass Index)

BMI	Observed Estimate	Bootstrap *SE*	*Z*	*p*-value	Decision	Remarks
Mean						
BMI	2.845	.104	27.420	.000		
Effect						
SB	-0.032	.101	-0.320	.749	Accept H_{04}	Not Significant
AC	0.197	.096	2.050	.040	Reject H_{04}	Significant
DH	-0.284	.115	-2.460	.014	Reject H_{04}	Significant
PA	-0.333	.096	-3.470	.001	Reject H_{04}	Significant
SED	0.143	.102	1.410	.160	Accept H_{04}	Not Significant

Note: p<.05* (Significant)*;* R^2= 0.2701; IV- Lifestyle Practices (SB-Smoking Behavior; AC- Alcohol Consumption; DH-Dietary Habits; PA- Physical Activity; SB- Sedentary Behavior); DV- Cardiovascular Risk Factor (Blood Pressure)

The findings support evidence that regular physical activity and healthy dietary practices contribute to weight management, while alcohol intake may add calories and interfere with healthy weight control. Bays et al. (2026) nevertheless described obesity as a complex condition influenced by biological, genetic, behavioral, social, and environmental factors. These findings imply that workplace weight-management programs should combine structured physical activity, nutrition education, healthier food options, alcohol-risk counseling, and regular BMI monitoring. Because 72.99% of BMI variation remained unexplained, personnel with elevated BMI should receive individualized assessment of sleep, metabolism, medical conditions, medication use, stress, work schedules, and total energy intake rather than relying on a single lifestyle intervention.

Waist Circumference Among Male Respondents

The results (see Table 7.3) showed that lifestyle practices collectively explained only 13.1% of the variation in waist circumference among male respondents (R^2 = .131). Sedentary behavior had the largest positive estimate (Estimate = .234, p = .107), whereas dietary habits had the largest negative estimate (Estimate = −.153, p = .356). However, smoking behavior, alcohol consumption, dietary habits, physical activity, and sedentary behavior did not significantly predict male waist circumference, and all corresponding confidence intervals included zero. Therefore, we did not reject the null hypothesis for any lifestyle-practice dimension. The directions of the nonsignificant estimates should not be interpreted as evidence of protective or harmful effects.

Table 7.3. The Test of Influence of Lifestyle Practices on Cardiovascular Risk Factor (Waist Circumference-Male)

			95% Confidence Intervals			
Model	**Estimate**	***SE***	**Lower**	**Upper**	***z***	***p***
(Intercept)	0.805	.100	0.609	1.001	8.065	<.001
SB	-0.126	.085	-0.292	0.040	-1.493	.135
AC	0.028	.146	-0.259	0.314	0.188	.851
DH	-0.153	.166	-0.478	0.172	-0.922	.356
PA	0.115	.135	-0.149	0.380	0.855	.393
SED	0.234	.146	-0.051	0.520	1.610	.107

Note: p<.05* (Significant); R^2= 0.131; IV- Lifestyle Practices (SB-Smoking Behavior; AC- Alcohol Consumption; DH-Dietary Habits; PA- Physical Activity; SB- Sedentary Behavior); DV- Cardiovascular Risk Factor (Waist Circumference-Male).

The model's limited explanatory power suggests that abdominal adiposity among male respondents may reflect the combined influence of genetics, metabolism, caloric intake, sleep, occupational stress, medication use, and existing health conditions. Liang et al. (2022) linked sedentary behavior and physical inactivity to obesity-related outcomes, while Salem et al. (2026) found that combined, sustained dietary modification and structured physical activity produced more consistent reductions in waist circumference. These findings suggest that male waist circumference should be measured directly and regularly rather than inferred from self-reported lifestyle practices. Workplace programs should employ an integrated approach involving nutritional counseling, structured physical activity, reduced sitting time, responsible alcohol consumption, smoking cessation, and appropriate referral of personnel with central obesity.

Waist Circumference Among Female Respondents

The results (see Table 7.4) revealed that the five lifestyle practices collectively explained only 8.48% of the variation in waist circumference among female respondents (R^2 = .0848). Physical activity had the largest positive estimate (Estimate = .194, p = .638), followed by dietary habits (Estimate = .170, p = .534), smoking behavior (Estimate = .150, p = .737), sedentary behavior (Estimate = .048, p = .888), and alcohol consumption (Estimate = .032, p = .952). However, none of these lifestyle practices significantly predicted female waist circumference, and all confidence intervals included zero. Therefore, the null hypothesis was

not rejected for any predictor. The positive estimates should not be interpreted as evidence that healthy dietary habits or physical activity increase waist circumference because the observed effects were statistically nonsignificant.

Table 7.4: The Test of Influence of Lifestyle Practices on Cardiovascular Risk Factor (Waist Circumference-Female)

			95% Confidence Intervals			
Model	**Estimate**	***SE***	**Lower**	**Upper**	***z***	***p***
(Intercept)	1.000	.221	0.566	1.434	4.520	<.001
SB	0.150	.448	-0.728	1.028	0.335	.737
AC	0.032	.529	-1.006	1.070	0.060	.952
DH	0.170	.273	-0.365	0.704	0.622	.534
PA	0.194	.413	-0.616	1.004	0.470	.638
SED	0.048	.337	-0.613	0.708	0.141	.888

Note: p<.05* (Significant); R^2= 0.0848; IV- Lifestyle Practices (SB-Smoking Behavior; AC- Alcohol Consumption; DH-Dietary Habits; PA- Physical Activity; SB- Sedentary Behavior); DV- Cardiovascular Risk Factor (Waist Circumference-Female).

The low R^2 indicates that factors outside the model may largely influence female waist circumference, including genetics, hormonal and reproductive characteristics, metabolism, total energy intake, sleep, stress, medication use, and existing health conditions. Salem et al. (2026) found that combined and sustained dietary and physical-activity interventions produced more consistent reductions in waist circumference. These findings imply that female personnel should undergo direct waist-circumference monitoring and individualized assessment that considers both behavioral and female-specific physiological factors. Workplace programs should continue promoting balanced nutrition, regular physical activity, reduced sedentary time, smoking cessation, and responsible alcohol consumption, even though none of these practices independently predicted waist circumference in this sample.

SUMMARY OF FINDINGS

Based on the data gathered and analyzed, the following findings were obtained:

1. The respondents were predominantly 30–39 years old, comprising 82.8% of the sample. Respondents aged 40–49 years accounted for 12.1%, those aged 20–29 years comprised 3.4%, and only 1.7% were aged 50 years and above. In terms of sex, 70.7% were male, while 29.3% were female. These findings indicate that the study population was relatively homogeneous in age and predominantly male. Thus, the findings should be interpreted in consideration of the greater representation of males and respondents within the 30–39-year-old age group.
2. The respondents demonstrated varying levels of lifestyle practices across the five dimensions assessed. Physical Activity had the highest mean of 3.60 (SD = 1.07), interpreted as High. At the same time, Dietary Habits had a mean of 3.13 (SD = 0.91), and Sedentary Behavior had a mean of 2.85 (SD = 1.02), both interpreted as Moderate. Alcohol Consumption obtained a mean of 2.18 (SD = 1.05), interpreted as Low, while Smoking Behavior obtained the lowest mean of 1.71 (SD = 1.21), interpreted as Very Low. Since smoking behavior and alcohol consumption are negative lifestyle practices, their low scores represent favorable findings, indicating relatively infrequent engagement in these behaviors. However, Smoking Behavior showed the highest variability among the dimensions, suggesting differences in smoking practices among respondents despite the very low mean. Overall, the findings indicate relatively favorable physical activity and low engagement in smoking and alcohol consumption, while dietary habits and sedentary behavior remain areas for improvement.
3. Cardiovascular risk factors were evident among the respondents. In terms of blood pressure, 25 respondents (43.1 percent) were classified as Normal; however, 33 (56.9 percent) were classified as having Elevated blood pressure, Stage 1 Hypertension, or Stage 2 Hypertension. For BMI, Overweight was the most common classification, accounting for 31 respondents (53.4 percent). When overweight and obesity classifications were combined, 40 respondents (68.9 percent) had BMI values above the normal range. For waist circumference, 23 or 56.10 percent of male respondents were classified as Increased, followed by 13 or 31.70 percent as No Disease Risk, and 5 or 12.20 percent as High. Among female respondents, 7 (41.18 percent) were classified as High, while 5 (29.41 percent) each were classified as No Disease Risk and Very High. Consequently, 70.59 percent of the female respondents were within the High or Very High categories. These results indicate cardiovascular risk among the respondents, particularly elevated blood pressure, excess body weight, and increased central adiposity.
4. Age was not significantly associated with the respondents' lifestyle practices, LR(141) = 58.270, p = 1.000, whereas sex demonstrated a statistically significant association with lifestyle practices, LR(3) = 64.624, p = .045. The corresponding Cramér's V coefficients were φc = .944 for age and φc = .957 for sex. Despite the substantial reported effect size for age, its association was not statistically significant and should therefore be interpreted with caution. The significant finding for sex indicates that lifestyle-practice patterns differed according to sex within the study population, suggesting that sex is an important demographic characteristic to consider when examining respondents' lifestyle behaviors.
5. Age was not significantly associated with blood pressure, BMI, or waist circumference, whereas sex was significantly associated with all three cardiovascular risk factors. Sex demonstrated a significant association with blood pressure, LR(3) = 16.202, p = .001, φc = .512; BMI, LR(4) = 10.644, p = .031, φc = .426; and waist circumference, LR(3) = 9.135, p = .028, φc = .396. Among the significant associations, the strongest effect size was observed for blood pressure, followed by BMI and waist circumference. These findings indicate that the distributions of blood pressure, BMI, and waist circumference classifications differed significantly according to sex. In contrast, no statistically established differences in these cardiovascular risk factors were observed across the age categories.
6. The relationships between the individual lifestyle practices and cardiovascular risk factors varied according to the outcome examined. For blood pressure, Alcohol Consumption (r_s = .404, p = .002) and Sedentary Behavior (r_s = .412, p = .001) demonstrated significant positive relationships, indicating that higher alcohol consumption and sedentary behavior were

associated with higher blood pressure classifications. For BMI, Physical Activity showed a significant negative relationship (r_s = −.349, p = .007), indicating that greater physical activity tended to correspond with lower BMI classifications. In contrast, Smoking Behavior, Alcohol Consumption, Dietary Habits, and Sedentary Behavior were not significantly related to BMI.

7. Lifestyle practices demonstrated varying predictive influences on the cardiovascular risk factors. For blood pressure, Alcohol Consumption was a significant positive predictor (Estimate = 0.412, p = .007), while Sedentary Behavior was likewise a significant positive predictor (Estimate = 0.403, p = .001). The model accounted for 50.21% of the variability in blood pressure. For BMI, Physical Activity (Estimate = −0.333, p = .001) and Dietary Habits (Estimate = −0.284, p = .014) were significant negative predictors, whereas Alcohol Consumption (Estimate = 0.197, p = .040) was a significant positive predictor. The model explained 27.01% of the variability in BMI. For waist circumference, none of the five lifestyle-practice dimensions significantly predicted it among either male or female respondents. Among males, the model explained 13.1% of the variability in waist circumference. Sedentary Behavior had the largest positive estimate (Estimate = 0.234, p = .107), while Dietary Habits had the largest negative estimate (Estimate = −0.153, p = .356). However, all p-values exceeded .05 and all confidence intervals included zero. Among females, the model explained 8.48% of the variability in waist circumference. Physical Activity had the largest positive estimate (Estimate = 0.194, p = .638), but none of the predictors were statistically significant, and all confidence intervals included zero. Overall, Alcohol Consumption and Sedentary Behavior significantly predicted blood pressure, while Physical Activity, Dietary Habits, and Alcohol Consumption significantly predicted BMI. However, the measured lifestyle practices did not significantly predict waist circumference among either the male or female respondents.

CONCLUSION

The findings provide context-specific evidence on the lifestyle practices and cardiovascular health of uniformed and non-uniformed personnel assigned to a police medical and dental unit in Region XI. Its principal contribution lies in demonstrating that cardiovascular risk is already present among predominantly young and actively employed personnel, even when favorable practices such as high physical activity and low smoking and alcohol consumption are generally observed. The findings further show that a combination of behavioral and demographic factors shapes cardiovascular health rather than a single lifestyle practice. In particular, alcohol consumption and sedentary behavior emerged as significant predictors of blood pressure, while physical activity, dietary habits, and alcohol consumption significantly predicted BMI. However, the measured lifestyle practices did not independently predict waist circumference among either male or female respondents, emphasizing the multifactorial nature of abdominal adiposity. Sex was also significantly associated with lifestyle practices and cardiovascular risk indicators, supporting the need to consider sex-related differences in health assessment without interpreting these associations as causal.

For nursing and occupational health practice, the study highlights the importance of integrating routine blood pressure, BMI, and waist-circumference monitoring into workplace health services. Preventive programs should prioritize limiting alcohol consumption, interrupting prolonged sitting with regular movement, maintaining consistent physical activity, and improving dietary practices. Interventions should be comprehensive and responsive to the different needs of male and female personnel rather than relying on a uniform approach. Healthcare personnel should also receive individualized counseling, timely clinical referral, and continued monitoring, particularly when multiple cardiovascular risks are identified. These measures align with evidence that combined, sustained lifestyle interventions generally produce better cardiovascular and anthropometric outcomes than isolated strategies (Armstrong et al., 2022; Salem et al., 2026).

At the policy level, the findings may guide police administrators in developing a workplace cardiovascular health program that includes periodic screening, protected opportunities for physical activity, scheduled movement breaks, healthier food options, alcohol-risk education, stress-management support, and referral pathways for personnel with elevated health indicators. Institutional policies should promote a work environment that enables healthy choices despite irregular schedules, administrative responsibilities, and emergency duties. In nursing education and continuing professional development, greater emphasis should be placed on occupational cardiovascular risk, lifestyle assessment, interpretation of anthropometric indicators, behavior-change counseling, and healthcare personnel's responsibility to protect their own health while caring for others.

For research, the study provides baseline evidence for investigating cardiovascular risk among police healthcare personnel, a population that remains limited in the literature. Future studies should include larger, more diverse samples from multiple police units and geographic locations to improve the findings' generalizability. Longitudinal research is recommended to clarify how lifestyle practices and cardiovascular indicators change over time, while intervention studies may test the effectiveness of structured workplace wellness programs. Future researchers may also incorporate objective measures of physical activity and sedentary time, detailed dietary and alcohol assessments, and additional variables such as sleep, stress, duty schedules, medication use, chronic illness, metabolic indicators, hormonal factors, and family history. Qualitative or mixed-methods studies may further explain the personal and occupational conditions that influence personnel's ability to maintain healthy practices. These directions may provide a more complete basis for developing effective, evidence-based, and sustainable cardiovascular health programs.

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