ISSN: 2091-2749 (Print)
2091-2757 (Online)

Submitted on: 16 Aug 2025
Accepted on: 28 Dec 2025

https://doi.org/10.3126/jpahs.v12i2.88968

Prevalence of hypertension and its associated risk factors among teachers in governmental secondary schools of Godawari Municipality, Lalitpur: a cross-sectional study

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Abstract

Introduction: Hypertension is one of the leading causes of premature morbidity and mortality in the world and prevalence is rising in developing countries. The objective of this study was to determine the prevalence and the associated risk factors among teachers working in governmental secondary schools in Godawari Municipality, Lalitpur, Nepal.

Method: A cross-sectional analytical study was conducted among the teachers working in the governmental secondary schools during June to August 2023. Sample size was 309 (total enumerative sampling). Data was collected by using a self-administered questionnaire and conducting physical measurements. Chi square test was used to assess the factors associated with hypertension. Multiple logistic regression analysis was done to find out the risk factors of hypertension.

Result: Among 309 participant, 165(53.40%) were female, 186(60.19%) were above 40 years of age.The prevalence of hypertension was 89(28.80%) among which 48(53.93%) participants were already diagnosed as hypertension and on medication. The prevalence of hypertension was positively associated ($p < 0.05$) with age, co-morbid condition, family history of hypertension, smoking and alcohol consumption habit, dietary patterns, body mass index, physical activity and obesity. The multivariate logistic regression analysis identified age, smoking habit and alcohol consumption as risk factors for the development of hypertension among the school teachers.

Conclusion: From the findings of the study, it is concluded that the prevalence of hypertension among school teachers is 28.8. Awareness program including lifestyle modification and behavior change is important for the prevention and treatment of hypertension among these teachers.

Keywords: Hypertension; Prevalence; Risk Factors; School Teachers

How to Cite: Ghimire N, Mishra R. Prevalence of hypertension and its associated risk factors among teachers in governmental secondary schools of Godawari Municipality, Lalitpur: a cross-sectional study. J Patan Acad Health Sci. 2025 Dec;12(2):66-74.

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Introduction

Hypertension (HTN) is a major risk factor for stroke, myocardial infarction, heart failure, chronic kidney disease and cognitive impairment.[1] HTN is diagnosed when blood pressure ≥140/≥90 mmHg and is often called "silent killer" because often there are no apparent symptoms, making regular blood pressure measurement essential.[2,3]

The disease burden is increasing in low and middle-income countries (LMIC) because of unhealthy diet, physical inactivity, tobacco and alcohol use, and obesity. Other emerging risk factors include pollution, urbanization, and a loss of green space.[4]

It is estimated that 1.28 billion adults aged 30-79 years worldwide have HTN, most (two-thirds) living in LMIC.[5] The Nepal Demography and Health Survey 2022 reported the prevalence of HTN in Nepal as 18% and 23% in women and men aged greater than 15 respectively.[6] A systematic review and meta-analysis of 40 studies(2000-2020) showed 28.52% of patients were hypertensive, among which only 45.28% were aware of their condition, 31.66% under treatment, and 44.4% had their blood pressure under controlled.[7]

Studies among school teachers showed varied prevalence, 52% in Dhaka, Bangladesh,[8] 45% in Dibrugarh, India,[9] and 16.4% in Nawalparasi, Nepal.[8-10] In a study done in Pokhara, Nepal the prevalence of HTN was 35.5%.[11]

In Nepal, although a few studies have assessed hypertension among school teachers,most of the studies have focused on community populations rather than teachers. School teachers possess risk of developing HTN due to sedentary life style behavior.[8] This study aimed to identify the prevalence of HTN among school teachers and the associated risk factors.

Method

A cross-sectional analytical study design was used to determine the prevalence of hypertension (HTN) and to identify associated risk factors among school teachers. The study was conducted in Godawari Municipality of Lalitpur District which lies in Bagmati province. It is located in the southern part of the Kathmandu Valley. The study population comprised all school teachers involved in teaching at government secondary schools in Godawari Municipality. There was a total of 35 government schools in the municipality, out of which 17 were secondary-level schools. The total number of teachers working in the 17 government secondary schools was 315. All teachers working in these secondary schools were included in the study. A non-probability total enumerative (census) sampling technique was adopted, in which every eligible member of the target population was approached for inclusion, rather than selecting a subset.

Sample size was initially calculated using Cochran's formula for prevalence studies, taking an expected prevalence of hypertension of 16.4% from a previous study among school teachers in Devchuli Municipality, Nawalparasi, Nepal, and specifying a 95% confidence level with a 5% margin of error. Based on this prevalence (p = 16.4%), the calculated minimum required sample size was 211. However, since the total population of teachers in the 17 government secondary schools (N=315) was fully accessible and operationally manageable, a census (total population/total enumerative) approach was adopted to include all eligible teachers in order to maximize statistical power and avoid sampling error, rather than restricting the study to the minimum calculated sample. Thus, all 315 eligible teachers were considered as the study population.

$$n = Z^2 p \left(\frac{1-p}{e^2}\right)_2$$

During data collection, six teachers withdrew from the study; therefore, the final sample size was 309, which still exceeds the initially calculated minimum of 211 and thus maintains adequate power for estimating the prevalence of hypertension and assessing associated factors. Teachers who were willing to participate were included in the study. Pregnant female teachers and teachers on long leave during the data collection period were excluded.

Data were collected using the WHO STEPwise questionnaire for non-communicable disease risk factors, a self-developed structured questionnaire, and physical measurements. A few additional questions were included in the questionnaire after reviewing relevant literature. The content validity of the instruments was established through consultation with subject experts. The research instruments were pretested for clarity and feasibility among 10% of the total sample (32 teachers) in a similar setting.

The reliability of physical measurement instruments was ensured through periodic cross-checking of the weighing scale, blood pressure measuring instrument, and non-stretchable measuring tape. The same instruments were used for all participants. Physical measurements included height, weight, blood pressure, waist circumference, and hip circumference.

The research proposal was approved by the Institutional Review Committee (IRC) of of Patan Academy of Patan Academy of Health Sciences (PAHS) (Ref. 2305231727). Following approval, formal permission was obtained from the Education Department of Godawari Municipality and from the school heads of the concerned schools. Before data collection, informed written consent was obtained from each participant after explaining the objectives of the study and the time required. Participants were

assured that participation was voluntary and that they could withdraw at any time without providing any reason.

Data collection was carried out in the respective schools during teachers' break or leisure time, according to their convenience. To maintain privacy, a separate classroom or designated area was arranged for data collection with the support of the school administration. Any queries related to the questionnaire were clarified by the researchers during data collection. Data collection was conducted chronologically in schools located from ward numbers 1 to 14. The average time required for data collection was approximately 20–25 minutes per participant. Data were collected by the researchers themselves over a three-month period from June to August 2023.

Sociodemographic characteristics, behavioral risk factors, tobacco use, alcohol use, physical activity, and dietary patterns were collected using a self-administered structured questionnaire based on the WHO STEPwise approach. Confidentiality was maintained by using code numbers and not revealing the identity of participants. Participants found to have high blood pressure during measurement were advised and referred to appropriate health facilities for further diagnosis and management, in line with recommended NCD risk factor management practices. After completion of data collection, a health education session on hypertension, its risk factors, and preventive measures was conducted by the researchers.

Blood pressure was measured using the auscultatory method with a standard adult-size aneroid sphygmomanometer and stethoscope. Measurements were taken from the bare upper arm in a sitting position with the arm supported at heart level. Participants were instructed to rest for at least 5 minutes before measurement and to avoid alcohol, caffeine, and physical activity for at least 30 minutes prior. Blood pressure was measured twice at a minimum interval of 5 minutes, and the mean of the two readings was used for classification as normotensive or hypertensive.

Body weight and height were measured to calculate Body Mass Index (BMI). Weight was measured to the nearest 0.1 kg using a portable digital weighing scale, with participants wearing light clothing and no footwear. Height was measured to the nearest 0.1 cm in a standing position using a non-stretchable measuring tape fixed to a wall. BMI was calculated using the formula: BMI = weight (kg) / height (m^2). Waist circumference was measured in centimeters at the midpoint between the lower margin of the last palpable rib and the top of the iliac crest at the end of normal expiration. Hip circumference was measured at the widest part of the buttocks.

The collected data were analyzed using the Statistical Package for Social Sciences (SPSS) version 16. Descriptive statistics such as frequencies and percentages were computed. The chi-square test was used to assess associations between dependent and independent variables. Multivariable logistic regression analysis was performed to identify independent factors associated with hypertension, and a p-value of <0.05 was considered statistically significant.

Hypertension refers to a mean measured systolic blood pressure of ≥140 mmHg and/or diastolic blood pressure of ≥90 mmHg or self-reported current use of antihypertensive medications. Tobacco use was identified using the WHO STEPwise questionnaire, in which respondents were asked about current, daily, and past use of tobacco; pictorial show cards were used to identify tobacco products. Alcohol consumption in this study was defined as current drinking status. A current drinker refers to a participant who had consumed alcohol in the last month and was still consuming alcohol; current drinkers were further categorized into regular and occasional drinkers, where regular drinkers were those who consumed alcohol every day in the last month, and occasional drinkers were those who consumed alcohol on a few days (less than a week) in the last month. Physical activity was defined in terms of adequate and inadequate activity. Adequate physical activity was defined as performing at least 150 minutes of moderate-intensity aerobic physical activity per week, or at least 75 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity, whereas inadequate physical activity was defined as performing less than these recommended levels. Body mass index (BMI) was calculated as weight in kilograms divided by the square of height in meters (kg/m^2) and classified as underweight (<18.5 kg/m^2), normal weight (18.5–24.9 kg/m^2), overweight (25.0–29.9 kg/m^2), or obese (≥30.0 kg/m^2). Abdominal obesity was determined using waist circumference and waist-hip ratio criteria for the South Asian population, where waist circumference ≥90 cm in males and ≥80 cm in females was considered obese, and a waist-hip ratio ≥0.90 in males and ≥0.85 in females was considered obese. Dietary pattern included fruit and vegetable intake, added salt intake, and fatty food intake. Fruit and vegetable intake was considered sufficient if participants consumed five or more servings (approximately 400 g) per day and insufficient if intake was less than five servings per day; one serving was defined as one cup of vegetables or one medium-sized fruit, and intake was estimated using pictorial cards and standard measuring cups. Added salt intake was considered normal if salt consumption was 5 g or

less per day per person (approximately one teaspoon) according to WHO recommendations, while intake exceeding this amount was considered use of added salt; respondents were asked about adding salt to food during preparation or just before eating. Diabetes mellitus was defined as self-reported diabetes or a history of taking any antidiabetic medication.

Result

There were 315 respondents in the study; however, 6 of them declined to take part, leaving a response rate of 309(98.00%). The average age and standard deviation of the participants were 42.4 ± 9.3, and 103(33.33%) of them belonged to the 40–49 years age range. Among the total participants, 289(93.53%) were married, and 165(53.40%) were females. A total of 143(46.27%) of the participants had completed Master's degree or higher education. A total of 219(70.87%) were identified as Brahmin/Chhetri, 75(24.27%) as Janajati, eight (2.59%) as Dalit, and seven (2.27%) as Madhesi, Table 1.

Table 1. Sociodemographic Characteristics of the participants. (N=309)

Characteristics	n (%)
Age (years)	
<30	28(9.06)
30-39	95(30.74)
40-49	103(33.33)
50-59	83(26.85)
Mean ± SD	42.4 ± 9.3
Gender	
Male	144(46.61)
Female	165(53.39)
Marital Status	
Married	289(93.53)
Unmarried	20(6.47)
Education	
SLC	12(3.88)
12th class	63(20.39)
Bachelor	91(29.45)
Master or above	143(46.29)
Ethnicity	
Brahmin/Chhetri	219(70.87)
Janajati	75(24.27)
Dalit	8(2.59)
Madhesi	7(2.27)

Out of the total participants, 48(15.53%) were already hypertensive and all were under medication. A total of 94(30.42%) had a family history of hypertension. Among participants, 29(9.39%) were diabetic and 44(14.24%) had co-morbid conditions, Table 2.

Regarding behavioral risk factors of hypertension among participants, 29(9.39%) were currently using smoking tobacco products, 15(4.85%) were past smoking tobacco users, and 21(6.80%) were currently using smokeless tobacco products. A total of 59(19.09%) reported that they consumed alcohol last month and were still consuming. Among alcohol users, all of them consumed alcohol occasionally, Table 3.

Table 2. Clinical characteristics of the study participants related to hypertension and associated co-morbidities (N=309)

Characteristics	N (%)
Hypertension	
Yes	48(15.53)
No	261(84.47)
Antihypertensive Medication (n=48)	Yes
Diabetes	
Yes	29(9.39)
No	280(90.61)
Anti-diabetic Medication (n=29)	Yes
Family History of Hypertension	
Yes	94(30.42)
No	215(69.58)
Family members with HTN (n=94)	
Parent	81(86.17)
Sibling	4(4.26)
Others	2(2.13)
Comorbid Condition	
Yes	44(14.24)
No	265(85.76)
Comorbid diseases (n=44)	
Diabetes	29(65.91)
Thyroid	8(18.18)
High cholesterol	7(15.91)

Table 3. Behavioral risk factors, dietary habits, and physical activity (N=309)

Variables	N (%)
Smoking Tobacco	
Current smoker	29(9.39)
Daily smoker (n=29)	21(72.41)
Past smoker	15(4.85)
Daily past smoker (n=15)	14(93.33)
Smokeless Tobacco	
Current use	21(6.80)
Daily use (n=21)	21(100.00)
Alcohol Consumption	
Yes	59(19.09)
Occasional (n=59)	59(100.00)
Dietary Habits	
Vegetarian	63(20.39)
Mixed diet	246(79.61)
<5 servings fruits/vegetables/day	202(65.37)
≥5 servings/day	107(34.63)
Added salt use	35(11.33)
Fat-rich food intake	206 (66.67)
Physical Activity	
Adequate	191(61.81)
Inadequate	118(38.19)

Table 4. Distribution of participants according to boday mass index and obesity indicators (N=309)

Variables	n (%)
Body mass index	
Underweight <18.5	3(0.97)
Normal weight 18.5-24.9	108(34.95)
Overweight 25-29.9	150(48.54)
Obese ≥30	48(15.53)
Waist circumference	
Normal (<90 and female <80)	131(42.39)
Obese (Male ≥90 and female ≥80)	17(57.61)
Waist/hip ratio	
Normal (Male <0.90 and female <0.85)	101(32.69)
Obese (Male ≥0.90 and female ≥0.85)	208(67.31)

Regarding diet patterns, 246(79.61%) had a mixed diet and 107(34.63%) reported taking sufficient fruits and vegetables (five or more servings) as recommended. A total of 35(11.33%) reported adding salt to their regular foods. A total of 206(66.67%) consumed fat-rich foods and 124(40.13%) consumed them occasionally. A total of 118(38.19%) were not engaged in recommended physical activity, Table 3.

In physical measurements, three (0.97%) were underweight, 108(34.95%) had normal weight, 150(48.54%) were overweight, and 48(15.53%) were obese according to BMI classification of the South Asian population. A total of 178(57.61%) had abdominal obesity as indicated by increased waist circumference. A total of 208(67.31%) had increased waist-to-hip ratio and were identified as obese, Table 4.

The overall prevalence of hypertension (self-reported and measured) was 89(28.80%), while 220(71.20%) of participants had normal blood pressure. Of the total hypertensive, 48(53.93%) were previously diagnosed and under medication, while 41(46.07%) were newly diagnosed as hypertensive on measurement, Table 2.

Hypertension was significantly more prevalent among participants aged ≥40 years compared to those aged <40 years (p<0.001), while no significant association was observed with gender or educational status. A higher proportion of hypertensive participants had diabetes mellitus (p=0.004), a positive family history of hypertension (p<0.001), and other co-morbid conditions (p=0.003). Current smoking was more common among hypertensive individuals, whereas alcohol consumption was significantly associated with hypertension (p<0.001). Participants with hypertension were more likely to have inadequate fruit and vegetable intake (<5 servings/day; p<0.001)

Table 5 . Prevalence of hypertension and associated risk factors among participants (N=309)

Variables	Category	Normal N	Hypertension N	Chi-square	p value
Age groups	<40 years	111	12	36.148	0.000*
	≥40 years	109	77		
Gender	Male	97	47	1.935	0.164
	Female	123	42		
Education	Up to Bachelor	68	23	0.42	0.9
	Master or above	101	42		
Diabetes	Yes	14	15	8.2	0.004*
	No	206	74		
Family history of HTN	Yes	48	46	26.705	0.000*
	No	172	43		
Co-morbid conditions	Yes	23	21	8.96	0.003*
	No	197	68		
Smoking (current)		Yes	10	19	21.037
	No	210	70		
Alcohol consumption	Yes	24	35	33.123	0.000*
	No	196	54		
Vegetables & fruits intake	<5 servings/day	128	74	17.445	0.000*
	≥5 servings/day	92	15		
Fat-rich food intake	Yes	139	67	4.174	0.041*
	No	81	22		
Physical activity	Adequate	152	39	17.143	0.000*
	Inadequate	68	50		
BMI (kg/m²)	<25 Kg/m²	97	14	22.142	0.000*
	≥25 Kg/m²	123	75		
Obesity (waist circumference)	Normal (<90, <80)	114	17	27.773	0.000*
	Obese (≥90, ≥80)	106	72		

(Note: * Significance on Chi square test: (p<0.05 at 95% confidence level)

Table 6. Multiple logistic regression analysis of factors of hypertension among participants (N=309)

Variables	Normal	Hypertension	COR (95%CI)	AOR (95%CI)	P-Value
Age groups			6.534(3.366-12.683)	2.061(1.232-3.445)	0.006 *
<40 years	111	12			
≥40 years	109	77			
Family history of hypertension			3.833(2.269-6.478)	4.217(1.650-10.778)	0.003 *
Yes	48	46			
No	172	43			
Currently smoking tobacco			5.700 (2.530-12.840)	9.008(1.687-48.096)	0.010 *
Yes	10	19			
No	210	70			
Past smoking tobacco			5.443(1.805-16.418)	18.802(1.366-258.702)	0.028 *
Yes	5	10			
No	215	79			
Alcohol consumption			5.293(2.904-9.649)	3.274(1.163-9.223)	0.025 *
Yes	24	35			
No	196	54			

(Note: * p-value significant at <0.05, COR: Crude odds' ratio, AOR: Adjusted Odds' ratio, CI: Confidence interval)

and higher consumption of fat-rich foods (p=0.041). Inadequate physical activity was significantly more prevalent among hypertensive participants compared to normotensive participants (p<0.001). Hypertension was also significantly associated with higher body mass index (≥25 kg/m²) and abdominal obesity as defined by waist circumference criteria for the South Asian population (p<0.001), Table 5.

In the multivariable model including all variables with p<0.05 from the bivariate analysis, age, family history of hypertension, current smoking, past smoking, and alcohol consumption remained independently associated with hypertension. Teachers in older age groups had higher odds of hypertension (AOR=2.06; COR=6.53; p=0.006), those with a family history of hypertension had higher odds (AOR=4.21; COR=3.83; p=0.003), current smokers (AOR=9.00; COR=5.70; p=0.010), past smokers (AOR=18.80; COR=5.44; p=0.025), and those who consumed alcohol (AOR=3.27; COR=5.29; p=0.025) were more likely to be hypertensive, Table 6.

Discussion

The present study was conducted among 309 teachers working in government secondary schools in suburban area of Nepal. The study showed overall prevalence of HTN was 28.8%. Similar finding was observed in various international and national studies. One study done in northwest Ethiopia among 222 secondary school teachers showed the prevalence of 29.28%.[18] Also a study done among 1,528 adults and older living in Kibera slum of Nairobi showed prevalence of 29.4 %.[19] A study done among 70 primary school teachers in Karnataka of India showed prevalence of 28.57%.[20] Similarly, a study conducted among 350 police in Maharastra of India showed prevalence of 28%.[21] A community-based study carried out among 587 participants in Kathmandu reflected the prevalence of 32.5%.[22] Another consistent study done in Udayapur of Nepal among 430 community people showed prevalence of HTN was 25.1%.[23] The prevalence of HTN was found higher (52.3%) in a study done in Bangladesh among 323 school teachers.[8] Also, another community-based study among 240 participants of Changunarayan of Nepal showed the prevalence of 35.4% among community people.[24] The study among 393 participants aged 18-70 years in Pokhara showed the prevalence of 35.5%.[11] Similarly, another study done in Pokhara among 323 elderly showed the prevalence of 34.4%.[25] The prevalence of hypertension among 317 veterans Indian Gorkha regiments living in Pokhara was 66.2 %.[26] Another study done among 405 participants aged 50 years or above in Banepa showed the prevalence of 44.9%.[13]

The difference in the prevalence between the present study and the other studies might be due to the differences in sociodemographic characteristics, sample size, differences in study settings, life style and dietary patterns. The higher prevalence in the study done in Bangladesh may be due to the fact that respondents had extra salt intake habit (52.3%) and also current exercises were very less (27.9%). While in this study, only 11.3% of the participants had habit of extra salt intake and 61.8% were adequate physically active. Variations in the results in other studies done in Nepal might be due to age factor of the participants because this study was done among the school teachers aged up to 59 years but other studies covered population having age even above 60 years. Furthermore, participants in this study were school teachers who were educated, nearly half (46.3%) of whom completed Master or above. Therefore, they might be better aware on healthy dietary habit and lifestyles than general adult population.

The present study revealed that the prevalence of HTN was significantly associated with age, presence of diabetes, family history, habits of smoking and alcohol intake, dietary habits, inadequate physical activity, BMI>25 and central obesity. Similarly, these findings are aligned to the factors which were consistent with the community-based study carried out among adult population in Pokhara where age, smoking, alcohol consumption, salt adding habit, presence of diabetes status, and body mass index were significantly associated with HTN.[11] These findings were also consistent with the study done among adult population residing in Kathmandu which showed that age, smoking, alcohol consumption, physical activity, BMI, diabetes, and obesity were significantly associated with HTN.[22] Another community-based study carried out in Palpa showed comparable results to this study which reported that the prevalence of HTN was high in those with elevated waist to hip ratio as compared to in those with normal waist to hip ratio.[27]

This study also indicated that the advancing age was one of the associated factors with HTN (AOR=2.061, 95% CI: 1.232-3.445, p=0.006). This finding was comparable with the study done in Bahir Dar City of Ethiopia among school teachers (AOR: 2.506, 95% CI: 1.103–5.694, p=0.028).[18] Another community-based study done in Pokhara was also in-line with the findings of current study (AOR=4.92, 95% CI: 2.39-10.10, p=0.001).[11] Similarly, a community-based study conducted among people aged 18 years and above in Bhaktpur, Nepal also reflect similar findings (AOR=6.573, 95% CI: 2.944-14.676, p=0.000).[24] The findings of this study were also consistent with the findings of another study carried out aged 18-59 year in Udayapur, Nepal (AOR=1.09, 95% CI: 1.05-1.10, p=0.000).[23]

The present study found that the history of HTN was another factor for the higher prevalence which revealed that positive family history had four times higher risk of developing HTN (AOR=4.217, 95% CI: 1.650-10.778, p=0.003). This finding was supported by the study conducted in Ethiopia among school teachers which also reported that having a family history of HTN was 3.39 times (AOR: 3.387; 95% CI: 1.579, 7.265; and p=0.002) greater risk compared to those who had not a family history of HTN.[18] The result was similar to the study done among adult population in Sri Lanka that the presence of family history increased the risk of HTN (OR:1.29; 95% CI:1.13-1.47).[28] However, contrast to this finding was found in the study conducted among bank workers in Kathmandu, Nepal.[29]

This study also demonstrated that the smoking tobacco was another factor for the development of HTN (AOR=9.008, 95% CI: 1.687-48.096, p=0.010). The result was in line with the community-based study carried out in Ramechhap, Nepal which reported that current smoking habit had significant association with HTN (AOR=0.797 CI: 0.522-1.215).[30] In particular, similar finding was identified in the community-based study conducted in Bhaktapur, which revealed (AOR=2.116 CI=1.087-4.119).[24] This finding was also consistent with the community based study done in Kathmandu, Nepal which reflected (AOR=1.957 CI: 1.219-3.141).[22]

Present study reflected that the alcohol consumption was also one of the factors for HTN (AOR=3.274, CI: 1.163-9.223). This finding was in support with the study done in Bhaktapur which was (AOR=2.44, CI: 0.831-6.060).[24] This study finding disagreed with the result of the study conducted among bank workers in Kathmandu. [29] However, quantification of its uses could not be assessed in this study.

There were also some limitations in this study. The study was limited to school teachers and did not represent all population. The response was taken through the self-administered technique. Therefore, there may be chances of response bias and factual behavior and life style patterns could not be assessed. The measurement of blood pressure was taken only on a single setting, which may lead to misclassification. Stress being one of the associated factors of hypertension, was not included in the current study.

Conclusion

Based on the findings of this study, it was concluded that nearly one third of the school teachers were hypertensive. The study also revealed that age, family history of hypertension, smoking habit and alcohol consumption were independent risk factors for the development of hypertension among these school teachers. The factors associated with hypertension were age, presence of comorbid condition, use of tobacco and alcohol, dietary patterns, physical activity, BMI and obesity. More than half of the participants had BMI greater than normal. The study further revealed that only one third of the participants had adequate intake of vegetables and fruits. Given the high prevalence and the key modifiable risk factors identified particularly smoking and alcohol use, the study recommends the implementation of integrated workplace health programs within schools, including annual screening camps for blood pressure and BMI, on-site counseling for smoking cessation and alcohol use, and initiatives to promote physical activity, such as group walks or yoga sessions before or after school, to facilitate early detection, risk reduction, and healthier lifestyles among school teachers.

Acknowledgement

We acknowledge the University Grants Commission (UGC) for providing fund to conduct this research. We are grateful to Education Department of Godawari Municipality, Lalitpur and all concerned schools for giving permissions to undertake the study. We would also like to thank all the participants in the study.

Conflict of Interest

None

Funding

University Grants Commission (UGC) award number (SRDIG -77/78-HS-06)

Author Contribution

Concept, design, planning: NG, RM; Literature review: NG; Data collection: NG, RM; Data analysis: NG, RM Draft manuscript: NG, RM; Revision of draft: NG; Final manuscript: NG; Accountability of the work: NG, RM; Guarantor: NG, RM.

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