REPORT ON

AN EPIDEMIOLOGICAL STUDY ON THE ASSESSMENT OF CARDIOVASCULAR HEALTH STATUS AMONG MEDICAL DOCTORS IN LUMBINI PROVINCE, NEPAL

SUBMITTED TO:

NEPAL HEALTH RESEARCH COUNCIL

RAMSHAHPATH, KATHMANDU

PROVINCIAL HEALTH RESEARCH GRANT 2021

SUBMITTED BY:

SUDHIR KUMAR SHAH (PRINCIPAL INVESTIGATOR)

UNIVERSAL COLLEGE OF MEDICAL SCIENCES

BHAIRAHAWA

NEPAL

DECLARATION

I here declare that the report on “An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Lumbini Province, Nepal” submitted to Nepal health research council is original work and is based on primary data collected through the research process.

Sudhir Kumar Shah

Principal Investigator

APPROVAL SHEET

The undersigned approved that we read, approved and recommended Nepal Health Research Council Ram shah path, Kathmandu, Nepal for accepting a provincial research report entitled “An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Lumbini Province, Nepal” by Sudhir Kumar Shah, Department of Community Medicine, Universal College of Medical Sciences, Bhairahawa, Nepal.

Evaluation committee:

……. ……..

Nepal Health Research Council Signature

Ram shah path, Kathmandu, Nepal

ACKNOWLEDGEMENT

I would like to express my heartfelt gratitude to the Nepal Health Research Council for providing financial support under provincial grant 2079/2080 for this study. I would also like to express in depth gratitude to the ethical review committee for feedback, support and prompt ethical clearance. I gratefully acknowledge the cooperation from all the doctors who participated in the study.

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Sudhir Kumar Shah

Principal Investigator

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GLOSSARY OF ABBREVIATIONS

BMI: BODY MASS INDEX

BH: BODY HEIGHT

BW: BODY WEIGHT

CVD: CARDIO VASCULAR DISEASE

DBP: DYSTOLIC BLOOD PRESSURE

GOD/POD: GLUCOSE OXIDASE/PEROXIDASE

HTN: HYPERTENSION

NCD: NON COMMUNICABLE DISEASE

NHRC: NEPAL HEALTH RESEARCH COUNCIL

RBS: RANDOM BLOOD SUGER

SBP: SYSTOLIC BLOOD PRESSURE

SPSS:STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES

WHO: WORLD HEALTH ORGANIZATION

ABSTRACT

Background: Cardiovascular disease (CVD) is the largest cause of mortality and morbidity globally, killing almost 17.9 million people every year, representing 32% of all global deaths. Diabetes mellitus, hypertension and obesity are very strongly associated with cardiovascular diseases all over the world. In order to reduce the burden of CVD, we first need to assess cardiovascular health status of population. Medical Doctors play a vital role in the health and welfare of the people of a nation. Health of the doctors is of paramount importance because they themselves must be healthy to perform their jobs optimally under challenging work environments. Additionally, evidence suggests that there is a strong and consistent relationship between physician's health choices and the recommendations he or she makes to his or her patients.

Methods: In a Cross-sectional study, Cardiovascular health status of 354 sampled doctor's population of Lumbini Province were assessed using pre-designed and pre-tested semi structured questionnairefromAugust 2022 to March2023. Samples were taken from doctor's population using non probability purposive sampling technique. Blood pressure, Blood glucose, Blood cholesterol, Body height and weight were measured using standard guidelines. Collected data were entered and analysed using Statistical Package for the Social Sciences (SPSS version 26). Descriptive statistic procedures were used for the calculation central tendency and dispersion measures. Chi- Square or Fisher exact test were applied to find out association. P value of less than 0.05 were considered as statistically significant.

Results: Mean age of study population was 37.89(±7.70) years. Hypertension was seen among 22% of doctor's population. Among doctors, 58% had ideal level of fasting blood sugar and 77% had ideal level of cholesterol level. The present study showed substantially high prevalence of obesity BMI > 23(65%) among doctors population. Married were more obese (65%), hypertensive (26%) and diabetics (14%) compared to unmarried.

Conclusions: The prevalence of critical risk factors for cardiovascular disease that includes Hypertension, Diabetes mellitus, Hypercholesterolemia and obesity is high among doctors and hence it is a cause for concern. Healthy lifestyle measures might reduce burden of CVD which could be evaluated in future research.

Keywords: Cardiovascular disease; Diabetes Mellitus; Hypertension; Obesity; Hypercholesterolemia.

INTRODUCTION

Cardiovascular disease (CVD) is the number one cause of death globally; killing almost 17.9 million people every year, representing 32% of all global deaths.[1] Diabetes mellitus, hypertension and obesity are very strongly associated with cardiovascular diseases all over the world. Doctors play a vital role in the health and welfare of the people of a nation. Health of the doctors is of paramount importance because they themselves must be healthy to perform their jobs optimally under challenging work environments. Additionally, evidence suggests that there is a strong and consistent relationship between physician's health choices and the recommendations he or she makes to his or her patients.

According to the World Health Organization's recent update, diabetes, hypertension, and obesity are one of the top five continuing risk factors for cardiovascular deaths in the world. Obesity is increasing substantially and is one of the major contributors of disease prevalence due to its pathophysiological link to other cardiovascular risks such as hypertension and diabetes.[2]

In 2014, of the total 56 million deaths worldwide, NCD accounted for more than 70% (i.e. 38 million deaths). Of these, more than 70% (28 million deaths) of NCD deaths occurred in low and middle income countries. It is interesting to note that, cardiovascular diseases (CVDs) alone lead to 46.2% of NCD deaths followed by cancer, respiratory diseases and diabetes.[3]

Knowledge and awareness regarding CVDs and the associated risk factors is expected to be good among doctors since they have access to information.[4] However, they are also known to have a sedentary lifestyle with high levels of stress, lack of proper rest and irregular eating habits making them highly vulnerable to Cardio-vascular diseases.[5]

Rationale of Study

Diabetes mellitus, hypertension and obesity are very strongly associated with cardiovascular diseases all over the world. Doctors play a vital role in the health and welfare of the people of a nation. Health of the doctors is of paramount importance because they themselves must be healthy to perform their jobs optimally under challenging work environments. Additionally, evidence suggests that there is a

strong and consistent relationship between physician's health choices and the recommendations he or she makes to his or her patients.

Knowledge and awareness regarding CVDs and the associated risk factors is expected to be good among doctors since they have access to information. However, they are also known to have a sedentary lifestyle with high levels of stress, lack of proper rest and irregular eating habits making them highly vulnerable to Cardio-vascular diseases.

The prevalence of hypertension and diabetes in this group has not well studied in Nepal. So this study aimed to assess the prevalence of diabetes mellitus, hypertension obesity and hyperlipidemia among medical doctors in Nepal.

OBJECTIVES

General objectives

To find out the prevalence of Diabetes, Hypertension Obesity and Hyperlipidaemia among Medical Doctors

Specific objectives

To determine the associated risk factors of Diabetes, Hypertension Obesity and Hyperlipidemia among medical doctors

To assess the various demographical, behavioral and physical activity among medical doctors

RESEARCH QUESTION

What is the cardiovascular health status i.e. hypertension diabetes obesity among medical doctors in Lumbini Province Nepal?

RESEARCH METHODOLOGY

A Cross Sectional Study was carried out among Doctors working at various Government and Private Hospitals of province 5, Nepal. Doctors from basic and dental departments were also enrolled in the study conducted from August 2022 to March 2023. Ethical approval [ref no.689/2021] was obtained from the Ethical Review Board (ERB) of Nepal Health Research Council prior to data collection. Informed written consent was obtained from all study participants after providing all detailed information about the studypurpose and their right to withdraw at any time.

Sample size was calculated using formula Sample size (n) = Z^2pq/ d^2

Where,

Z = 1.96 at 95% confidence level

P = 0.36 (Reference study) [6]

Q = 1 - p = 0.64

d = margin of error at 5%

Taking the prevalence of hypertension among doctors as 35.6%and with an absolute precision of 5%, the sample size was estimated to be 354. A total of 354 doctors were selected using non probability purposive sampling technique. A Pre-tested structured questionnaire was used for data collection. The questionnaire consisted of three parts. The first part of questionnaire concerned socio-demographic characteristics including age, sex, and marital status. The second part data were on health behaviour including cigarette smoking, alcohol consumption, and physical activity. The third part collected data were body height (BH), body weight (BW), blood glucose(FBS), blood total cholesterol(TC) and blood pressure (BP) measurement of study respondents.

Blood pressure were measured by the conventional auscultatory method with an aneroid sphygmomanometer with standard sized cuff (12 × 34 cm). The blood pressure measurement was taken in the seated position, quietly in a chair with feet on the floor and an arm support at the level of heart. Three consecutive blood pressure readings were taken from the right arm and average of them were calculated to determine single value of blood pressure. Study respondents were considered as hypertensive if any of the following conditions were met - average Systolic Blood Pressure (SBP)

>140 mm Hg or Diastolic Blood pressure (DBP) > 90 mm Hg or if they have used antihypertensive drugs.[7]

Selected doctors in the study were requested for blood examination for evaluation of diabetes and hyperlipidemia. Sample was collected by skilled lab assistant and was transported to department of biochemistry under aseptic condition for required biochemical analysis.

Blood Sugar was measured by GOD/POD (Glucose oxidase/Peroxidase) method.

For the diagnosis of Diabetes, previous history of Diabetes was considered. If fasting blood sugar level were more than 126 mg/dl and postprandial more than 200mg/dl they were considered as diabetic. Total cholesterol: ideal (<200 mg/dl) and poor (≥200 mg/dl) were considered for hyperlipidemia.

Height and weight of the study participants were measured using the standard criteria. Height were measured using a non-stretchable measuring tape, with an accuracy of 0.1 cm, standing against a wall bare foot; weight were measured using an electronic weighing scale with an error of ±0.1 kg. Body Mass Index (BMI) werecalculated as weight (Kg) divided by height in (m2). BMI were classified as (≥23: obesity) and <23 (Normal) as per the criteria given by WHO for Asian population.

RESULTS

Mean age of the study population was 37.89(±7.70). Most (59.3%) of the study participant were female. Majority (71.5%) of study population were married.

Cardiovascular health status of the study participants

The present study showed that 21% of the study population had hypertension. Mean systolic and diastolic pressures were found to be 114 (±15) mm of hg and 73(±10) mm of hg respectively.

Prevalence of diabetes mellitus was found to be 13.8%. Mean random blood glucose value was found to be 101 mg/dl (±28). Mean Total Cholesterol (TC) values were found to be 136 (±38). Poor level of cholesterol was seen among 23% of study population.Prevalence of obesity was found to be 65% among doctors.

Table 1. Cardiovascular health status of study participants

Cardiovascular health status		Frequency (n=354)	Percentage (%)
Hypertension			
	Yes	75	21.2
	No	279	78.8
Fasting blood sugar			
	Ideal (<100mg/dl)	204	57.6
	Intermediate (100-125mg/dl)	101	28.5
	poor(>125mg/dl)	49	13.8
Total cholesterol			
	Ideal	273	77.1
	poor	81	22.9
Body Mass Index			
	Ideal (≤23kg/m^2)	125	35.3
	poor(>23kg/m^2)	229	64.7

Table 2: Distribution of study participants fasting sugar, systolic blood pressure, diastolic blood pressure and total cholesterol

Statistics	FBS (mg/dl)	SBP(mm hg)	DBP (mm hg)	TC (mg/dl)
Mean	101	114	73	136
SD	28	15	10	38
Minimum	62	90	60	70
Maximum	232	168	95	310

FBS: fasting blood sugar, SBP: systolic blood pressure, DBP: diastolic blood pressure, TC: total cholesterol, SD: standard deviation

Association of few Socio-demographical factors with cardiovascular health status of the study participants

Among doctors, Male were more hypertensive (34.7%) compared to female (11.9%) and this difference was found to be statistically significant (p=0.001).Hypertensive and Diabetics were observed more in the study population who did not indulge in any form of physical activity then who indulged in some form of physical activity and this difference was also found to be statistically significant [Table 3]. Male were more hypercholesterolemia 29.2% compared to female 18.6% and this association was found to be statistically significant. Obesity were observed more in age greater than 38 compared to age less than 38 and this association was found to be statistically significant.

Male (66.7%) and Female (66.3%) comprises almost equal proportion for significantly higher prevalence rate of obesity among the study population. Among doctors, married were more obese (65%), hypertensive (26%) and diabetics (14%) compared unmarried and this association was also found to be statistically significant [Table3].

Table 3: Association of socio demographical with cardiovascular health status

Socio-demographical Variable		Hypertension		Diabetes		Hypercholesterolemia		Obesity	
		Yes	No	Yes	No	Yes	No	Yes	No
Gender	Male	50(34.7)	94(65.3)	25(17.4)	119(82.6)	42(29.2)	102(70.8)	96(66.7)	48(33.3)
	Female	25(11.9)	185(88.1)	25(11.9)	185(88.1)	39(18.6)	171(81.4)	133(63.3)	77(36.7)
	p value	<0.001**		0.148		0.020*		0.519	
Age	≤38	34(17.3)	162(82.7)	24(12.2)	172(87.8)	39(19.9)	157(80.1)	110(56.1)	86(43.9)
	>38	41(25.9)	117(74.1)	26(16.5)	132(83.5)	42(26.6)	116(73.4)	119(75.3)	39(24.7)
	p value	0.049		0.258		0.137		<0.001**	
Marital status	Never Married	5(9.3)	49(90.7)	11(20.4)	43(79.6)	13(24.1)	41(75.9)	32(59.3)	22(40.7)
	Currently married	65(25.7)	188(74.3)	35(13.8)	218(86.2)	61(24.1)	192(75.9)	164(64.8)	89(35.2)
	Separated	0(0)	7(100)	0(0)	7(100)	0(0)	7(100)	7(100)	0
	Divorced	2(50)	2(50)	1(25)	3(75)	2(50)	2(50)	4(100)	0
	Widowed	0	3(100)	0	3(100)	0	3(100)	0	3(100)
	Cohabitating	3(9.1)	30(90.9)	3(9.1)	30(90.9)	5(15.2)	28(84.8)	22(66.7)	11(33.3)
	p value	0.009*		0.483		0.305		0.031*	
Smoking	Yes	17(35.4)	31(64.6)	7(14.6)	41(85.4)	14(29.2)	34(70.8)	21(43.8)	27(56.2)
	No	58(19)	248(81)	43(14.1)	263(85.9)	67(21.9)	239(78.1)	208(68.0)	98(32.0)
	p value	0.009*		0.922		0.265		0.001*	
Alcohol	Yes	38(27.1)	102(72.9)	21(15.0)	119(85.0)	36(25.7)	104(74.3)	96(68.6)	44(31.4)
	No	37(17.3)	117(82.7)	29(13.6)	185(86.4)	45(21.0)	169(79.0)	133(62.1)	81(37.9)
	p value	0.027*		0.702		0.305		0.216	
Physical activity	Yes	7(9.2)	69(90.8)	5(6.6)	71(93.4)	7(9.2)	69(90.8)	29(38.2)	47(61.8)
	No	68(24.5)	210(75.5)	45(16.2)	233(83.8)	74(26.6)	204(73.4)	200(71.9)	78(28.1)
	p value	0.004*		0.033*		0.001*		<0.001**	

*indicates statistically significant and ** indicates statistically highly significant at α=5%

DISCUSSION

In the present study the prevalence of hypertension among doctors was found to be 21.2%. This is in concordance with a hypertension prevalence study conducted in Tamil nadu where the prevalence of hypertension was 21.6% in similar study population.[8] Also, Fanghanel salmon G et al reported that the prevalence of hypertension was 22.2% among health care workers.[9]Kurtal S et al reported that the prevalence of hypertension was 13.5% among physician working at university hospital which was much lesser than the present study.[10]

Gupta A et al in their study among physicians reported that the prevalence of diabetes was 9.4% among males and 12.9% among females.[11] The prevalence of diabetes mellitus was found to be 15.6%. Sharma et al in their study among tertiary hospital employees. [12]The present study also revealed the similar prevalence of diabetes among the study population comprised of doctors.

The present study has revealed a substantially high prevalence of obesity BMI > 23(65%) among doctors population. Sharma D et al in their study also found the prevalence of obesity to be 80% among tertiary hospital employees. Gupta et al in their study found the prevalence of obesity to be 48.6% among male and 51.4% among female which was much lesser than the present study.

This substantially high prevalence of obesity as per Asian population guideline may be owing to the sedentary life style and lack of physical activity among the study population. The high prevalence of obesity among highly educated study population of a tertiary care hospital suggests serious lack of awareness regarding physical activity and diet. [13]

CONCLUSIONS

The present study showed that cardiovascular health status of the study participants was poor. The prevalence of critical risk factors for cardiovascular disease that includes hypertension, Diabetes mellitus, Hypercholesterolemia and obesity is high among doctors and hence it is a cause for concern. Large proportion of the study participates were having poor BMI and poor level of cholesterol. Males were more hypertensive and hypercholesterolemia. Married doctors were more hypertensive, diabetic and obese compared to unmarried. Healthy lifestyle measures such as physical activity, healthy diet, medication and good amount of sleep in the prevention of CVD could be further evaluated in future research.

LIMITATION OF THE STUDY

Detailed dietary history and quantification of certain risk factors were notassessed due to feasibility constraints.

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WORK PLAN

TIMELINE	2021			2022				2021
ACTIVITIES	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Submission of proposal								
Anticipated time for protocol approval								
Data collection								
Data entry and analysis								
Writing Report								
Submissionof Report								

Research Grant Budget

Budget Item	Details	Amount (Rs)
Laboratory Cost	Blood sugar and cholesterol level tests	₹65,000
Instrument Cost	BP cuff, Weighing machine, Measuring tape	₹10,000
Field Cost	Travel, data collection, field visits, etc.	₹5,000
Stationery Cost	Printing, photocopying, paper, pens, etc.	₹10,000
Human Resource Cost	Research assistant/field worker stipend	₹5,000
Miscellaneous Cost	Unforeseen or incidental expenses	₹5,000
Total		₹100,000

ANNEXES

Consent Form in Nepali

परिचयतथा स्वीकृति

नमस्कार ,

मेरो नामडा सुधिर कुमार शाहहो । म युनिभर्सल कलेज अफ मेडिकल साइन्स भैरहवामा सामुदायिकचिकित्शाविभागमाउप्रपध्यापकको रुपमाकामगर्दछु । हामीयहाँ अनुसन्धानगर्ने क्रममातथ्याङ्क संकलनको लागिआएकाहौ ।आजहामीतपाईलाई म सन्दर्भमा केहि प्रश्नहरु सोध्न चाहन्छौ ।मेरो अनुसन्धानको विषय"An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Province 5,Nepal" रहेको छ ।

तपाई यो सर्वेक्षणमा भागलिने नलिने निर्णय गर्न स्वतन्त्र हुनुहुन्छ ; साथै भाग लिनुभएपछि पनितपाई कुनै पनि वेला यो अन्तर्वाता छोडन सक्नुहुन्छ , यस्तै तपाईलाई केहि व्यक्तिगतप्रश्नहरु पनि सोधिनेछ तर यस्ता कुनै पनिप्रश्नको उत्तर दिनतपाई वाध्यहुनेछैन । यसका साथै मधुमेह परिक्षनको लागी ३ मि.ली. रगतको जाँचगर्नु पर्ने भएकोले यसमा सहयोग गरिदिन अनुरोध र्गदछु । यो अन्तर्वाताबाट तपाईलाई आर्थिक रुपमातत्काललाई कुनै फाइदाहुने छैन तर तपाइबाट प्राप्त सुचनाहरु मेरो अध्ययनको प्रयोजनको लागिप्रयोग हुनेछन । तपाईको कुनै पनिजवाफ ठीक वा बेठीक भन्ने हुदैन । तपाईसँगहामिले २५ मिनेट भित्रमा सम्पुर्ण प्रश्नावलि सोधेर सक्नेछौँ ।

म यस अध्ययनमा सहभागिताको लागीमन्जुर छु । ( )

म यस अध्ययनमा सहभागिताको लागीमन्जुर छैन । ( )

उत्तरदाताको/**अभिभाबकको सहि** .....:

ANNEX : DATA COLLECTION TOOL

Level MBBS……. BDS…….
Current Designation ……
Sex (*Record Male / Female as observed)*
1. Male 2. Female

How old are you? ……..in years

What is your marital status?
1. Never married2. Currently married3. Separated
4. Divorced 5. Widowed6. Cohabitating

Behavioral Measurements

A. Tobacco Use
Now I am going to ask you some questions about tobacco use.
Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes?
1. Yes2. No

IF YES, Do you currently smoke tobacco products daily?
1. Yes2. No

How old were you when you first started smoking? …….Age (years)

Do you remember how long ago it was? I n a year's…..

During the past 12 months, have you tried to stop smoking?
1. Yes2. No

In the past, did you eversmoke any tobacco products?
1. Yes2. No

In the past, did you ever smoke daily?
1. Yes2. No

B. Alcohol Consumption
The next questions ask about the consumption of alcohol.
Have you ever consumed any alcohol such as beer, wine, spirits or *[add other local examples]*?
1. Yes2. No

Have you consumed any alcohol within the past 12 months?
1. Yes2. No

During the past 12 months, how frequently have you had at least one standard alcoholic drink?

1. Daily 2. 5-6 days per week3.3-4 days per week

4. 1-2 days per week5. 1-3 days per month6. Less than once a month

7. Never

C. Physical Activity

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person.

Think first about the time you spend doing work. Think of work as the things that you have to do such as paid or unpaid work, study/training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

Work

1. Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like *[carrying or liftingheavy loads, digging or construction work]* for at least 10 minutes continuously?

1. Yes2. No

IF YES, In a typical week, on how many days do you do vigorous-intensity activities as part of your work? Number of days……..

How much time do you spend doing vigorous-intensity activities at work on a typical day?

Hours: minutes ……

2. Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking *[or carrying light loads]* for at least 10 minutes continuously?

1. Yes2. No

IF YES, In a typical week, on how many days do you do moderate-intensity activities as part of your work?

Number of days……..

How much time do you spend doing moderate-intensity activities at work on a typical day?

Hours: minutes ……

Travel to and from places

Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship.

Do you walk or use a bicycle *(pedal cycle)* for at least 10 minutes continuously to get to and from places?

1. Yes2. No

IF YES, In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?

Number of days……..

How much time do you spend walking or bicycling for travel on a typical day?

Hours: minutes ……

Recreational activities

The next questions exclude the work and transport activities that you have already mentioned.

Now I would like to ask you about sports, fitness and recreational activities

Do you do any vigorous-intensity sports, fitness or recreational *(leisure)* activities that cause large increases in breathing or heart rate like *[running or football]* for at least 10 minutes continuously?

1. Yes2. No

In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational *(leisure)* activities?

Number of days……..

How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?

Hours: minutes ……

Do you do any moderate-intensity sports, fitness or recreational *(leisure)* activities that cause a small increase in breathing or heart rate such as brisk walking, *[cycling, swimming, volleyball]* for at least 10 minutes continuously?

1. Yes2. No

In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational *(leisure)* activities?

Number of days……

How much time do you spend doing moderate-intensity sports, fitness or recreational *(leisure)* activities on a typical day?

Hours: minutes ……

Physical Activity : The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.

How much time do you usually spend sitting or reclining on a typical day?

Hours: minutes …….

History of Cardiovascular Diseases

Have you ever had a heart attack or chest pain from heart disease (angina) or a stroke (Cerebrovascular accident or incident)?
1. Yes2. No

Are you currently taking aspirin regularly to prevent or treat heart disease?
1. Yes2. NO

Are you currently taking statins (Lovastatin/Simvastatin/Atorvastatin or any other statin) regularly to prevent or treat heart disease?
1. Yes2. No

History of Raised Blood Pressure

Have you ever had your blood pressure measured by a doctor or other health worker?
1. Yes2. No

Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension?
1. Yes2. No

In the past two weeks, have you taken any drugs (medication) for raised blood pressure prescribed by a doctor or other health worker?
1. Yes2. No

History of Diabetes

Have you ever had your blood sugar measured by a doctor or other health worker?
1. Yes2. No

Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes?
1. Yes2. No

In the past two weeks, have you taken any drugs (medication) for diabetes prescribed by a doctor or other health worker?
1. Yes2. No

Physical Measurements

A. Blood Pressure

During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?

1. Yes 2. No

Cuff size used a. Small b. Medium c. Large

Blood Pressure	Systolic (mmHg)	Diastolic (mmHg)	Mean Blood Pressure
Reading 1			
Reading 2			
Reading 3			

B. Height and Weight

For women: Are you pregnant?

1. Yes2. No

Height in Centimetres (cm)	Weight in Kilograms (kg)	BMI

C. Waist and Hip Circumference

Waist Circumference in Centimeters (cm)	Hip Circumference in Centimeters (cm)	Waist/Hip Ratio

Step 3 Biochemical Measurements

A. Blood Glucose

Today, have you taken insulin or other drugs (medication) that have been prescribed by a doctor or other health worker for raised blood glucose?

1. Yes 2. No

During the past 12 hours have you had anything to eat or drink, other than water?

1. Yes2. No

If NO,

Fasting blood glucose in mmol/l .....

B. Cholesterol level .....

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.:

Contractual Service Agreement (CSA)

An agreement made between the Nepal Health Research Council and the Contractor on 20 November 2021.

Dr. Sudhir Kumar Shah (hereafter called Contractor) has been awarded by Nepal Health Research Council (NHRC) for the **Provincial Health Research Grant** of the Year 2021 entitled "**An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Nepal**" on the terms and conditions mentioned below:

1. **Nature of the service:** The contractor should initiate the research work after the agreement with NHRC and submit final research report latest by May 15, 2022.

2. **Duration of the project:** The duration of the study is six months.

3. **Payment schedule:**
   a. After signing the agreement – 50%
   b. After the submission of Final Report – 50%
   c. The total amount – NRs. 1,00,000/-

4. **Deliverables:**
   - Submit two copies of the final report in hard copy.
   - Provide the electronic version of the final report.

5. **Income tax:**
   NHRC will deduct tax as per rule of Government of Nepal.

6. In cases where the contractor does not submit the completed project reports within the timeline agreed between the parties, the contractor is obliged to return the whole amount provided by the NHRC. If solution is not found, NHRC reserves the right to take legal action according to applicable laws of the Government of Nepal.

2021-22-21

Dr. Pradip Gyanwali
Member-Secretary (Executive Chief)
NHRC

Contractor
Dr. Sudhir Kumar Shah
Principal Investigator

Cc: Account Section of NHRC

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.: 1478

16 December 2021

Dr. Sudhir Kumar Shah

Principal Investigator

Universal College of Medical Sciences

Bhairahawa

Ref: Approval of research proposal

Dear Dr. Shah,

This is to certify that the following protocol and related documents have been reviewed and granted approval through the expedite review process by the Expedited Review Sub-Committee meeting for it's implementation.

Protocol Registration No/ Submitted Date	689/2021 P 29 November 2021		**Sponsor Protocol No**	NA
Principal Investigator/s	Dr. Sudhir Kumar Shah		**Sponsor Institution**	NHRC Grant
Title	An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Lumbini Province, Nepal			
Protocol Version No	NA		**Version Date**	NA
Other Documents	1. Data collection tools 2. Informed Consent Form		**Risk Category**	Minimal risk
Co-Investigator/s	NA			
Study Site	Lumbini Province			
Type of Review	√	**Expedited**	**Duration of Approval** 16 December 2021 to 16 December 2022	**Frequency of continuing review** NA
	☐	Full Board		
	Meeting Date: 13 December 2021			
Total budget of research	**NRs 1,00,000.00**			
Ethical review processing fee	**Waiver as the research had received NHRC Grant**			

Tel: +977 1 4254220, Fax: +977 1 4262469, Ramshah Path, PO Box: 7626, Kathmandu, Nepal
Website: http://www.nhrc.gov.np, E-mail: nhrc@nhrc.gov.np

Date: 4th June 2025

To,
The Member-Secretary (Executive Chief)
NHRC

Subject: Submission of Final Research Report of Provincial Health Research Grant

Dear Sir,

I am a Principal Investigator of the Provincial Health Research Grant FY 2021 offered by Nepal Health Research Council (NHRC) for the study titled “An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Lumbini Province, Nepal” . As per the Contractual Service Agreement, I have been asked to submit the final research report.

I am attaching the final report of the study. Due to low enrolment, the conduction of the study is being delayed at present.

Looking forward to receiving a kind response.

Thanking you once again,

Sincerely yours,
Dr.Sudhir Kumar Shah
Assistant Professor, Department of Community Medicine
Universal College of Medical Sciences, Bhairahawa
E-mail: drsudhirkshah93@gmail.com
Mobile No.: 9843149438

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.:

Contractual Service Agreement (CSA)

An agreement made between the Nepal Health Research Council and the Contractor on 20 November 2021.

Dr. Sudhir Kumar Shah (hereafter called Contractor) has been awarded by Nepal Health Research Council (NHRC) for the **Provincial Health Research Grant** of the Year 2021 entitled **"An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Nepal"** on the terms and conditions mentioned below:

1. **Nature of the service:** The contractor should initiate the research work after the agreement with NHRC and submit final research report latest by May 15, 2022.

2. **Duration of the project:** The duration of the study is six months.

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2021-12-21

Dr. Pradip Gyanwali
Member-Secretary (Executive Chief)
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Contractor
Dr. Sudhir Kumar Shah
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Principal Investigator/s	Dr. Sudhir Kumar Shah	**Sponsor Institution**	NHRC Grant
Title	An Epidemiological Study on the Assessment of Cardiovascular Health Status among Medical Doctors in Lumbini Province, Nepal		
Protocol Version No	NA	**Version Date**	NA
Other Documents	1. Data collection tools 2. Informed Consent Form	**Risk Category**	Minimal risk
Co-Investigator/s	NA		
Study Site	Lumbini Province		
Type of Review	√ Expedited ☐ Full Board **Meeting Date:** 13 December 2021	**Duration of Approval** 16 December 2021 to 16 December 2022	**Frequency of continuing review** NA
Total budget of research	**NRs 1,00,000.00**		
Ethical review processing fee	**Waiver as the research had received NHRC Grant**		

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Nepal Health Research Council (NHRC)
Estd. 1991

Ref. No.: 1478

Investigator Responsibilities

- Any amendments shall be approved from the ERB before implementing them
- Submit progress report every 3 months
- Submit final report after completion of protocol procedures at the study site
- Report protocol deviation / violation within 7 days
- Comply with all relevant international and NHRC guidelines
- Abide by the principles of Good Clinical Practice and ethical conduct of the research

If you have any questions, please contact the Ethical Review M & E Section at NHRC.

Thanking you,

Dr. Pradip Gyanwali
Member- Secretary

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