**A research proposal for MPH thesis to the Department of Public Health**

**Title of the proposal**

**Study on the Nutritional Status and Its Impact on Physical Activity Levels Among Young Adults in Chattogram**

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**CHAPTER I**

**INTRODUCTION**

**1.1 Introduction**

The World Health Organization (WHO) defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. This includes activities such as working, playing, performing household chores, traveling, and engaging in recreational pursuits. It is important to distinguish physical activity from exercise, which is a planned, structured, repetitive activity designed to improve or maintain physical fitness (1). In contrast, any other physical activity, whether during leisure or as part of one's work, also provides health benefits. Both moderate- and vigorous-intensity physical activities contribute to improved health outcomes.

Physical inactivity is recognized by the WHO as the fourth leading risk factor for global mortality (2,3), and inactivity-related deaths have been increasing over time (4). In 2008, 3.2 million deaths annually were attributed to physical inactivity, and by 2012, this number rose to 5.3 million (5). Insufficient physical activity significantly contributes to the global burden of non-communicable diseases (NCDs), which are the leading causes of death worldwide. The mortality rate from NCDs is escalating at an alarming rate, with low- and middle-income countries being particularly vulnerable to NCD-related deaths and disabilities (6). Projections from 2004 suggested that NCD-related deaths in Southeast Asia would increase by approximately 60% by 2030 (7). In 2008, NCDs accounted for 55% of total deaths in this region, and this figure is expected to exceed 75% by 2030 (8). While data on regional trends are limited, South Asian countries are showing a steady increase in NCD-related morbidity (7,8). Given the rising burden of NCDs in South Asia and the protective role of physical activity, it is crucial to understand the physical activity profiles of individuals in this region.

Regular physical activity offers both physical and psychological benefits, including improved fitness, healthy weight, and the prevention and management of conditions such as diabetes, cardiovascular diseases, stress, and depression. However, despite these benefits, a large portion of the global population remains physically inactive. According to WHO estimates from 2010, approximately 23% of adults aged 18 and older failed to meet the recommended 150 minutes per week of moderate-intensity or 75 minutes per week of vigorous-intensity activity or an equivalent combination of moderate- to vigorous-intensity physical activity. In the WHO South-East Asian region, 15% of adults did not meet the recommended levels of physical activity (9).

Nutrition is another key determinant of health, playing a crucial role throughout the human life course in survival, development, and well-being. Proper nutrition strengthens the immune system, reduces the risk of adverse birth outcomes, and decreases the likelihood of chronic diseases such as diabetes and coronary heart disease, improving longevity (10–12). Malnutrition, especially undernutrition in women of reproductive age (defined as a body mass index [BMI] <18.5 kg/m²), increases the risk of low birth weight, neonatal illness, and other complications (13). Maternal underweight and short stature are also independent risk factors for preterm birth and small-for-gestational-age infants in rural Bangladesh (14). The double burden of malnutrition—where both undernutrition and overweight coexist—remains a significant global challenge. Worldwide, 1.9 billion adults are overweight or obese, while 462 million remain underweight. Despite this, the nutritional status of young people, particularly those aged 10–24 years, has not received sufficient attention, even though this period is critical for transitioning into adulthood and ensuring long-term health. The health and well-being of this group are vital for the country’s future and economic growth.

In Bangladesh, similar to global trends, the double burden of malnutrition affects young people. According to the latest National Demographic and Health Survey, approximately 13% of young women aged 15–24 years were underweighted, while 17% were overweight or obese (15). Among young men aged 20–29 years, 20% were underweight, and 13% were overweight or obese, highlighting the emerging dual problem of undernutrition and overweight (16). These rates of malnutrition also vary across different regions of the country, emphasizing the need for targeted health interventions.

**1.2 Justification of the Study**

The rise of unhealthy lifestyle habits, including poor nutrition and inadequate physical activity, is a growing public health concern, particularly among young adults in Bangladesh. Over the past two decades, obesity rates have sharply increased, driven by poor dietary choices and decreased physical activity, especially among university students. This age group is particularly vulnerable, as the habits formed during this transition to adulthood can significantly impact long-term health.

Physical activity offers numerous health benefits, including reducing the risk of chronic diseases, enhancing mental well-being, and improving cognitive function. The World Health Organization (WHO) recommends 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity per week. However, studies show a decline in physical activity levels, especially among males during the transition from adolescence to adulthood, contributing to rising rates of sedentary behavior and obesity.

University students face challenges in maintaining healthy lifestyles due to increased independence and academic pressures, leading to poor eating habits and irregular physical activity. Additionally, limited healthy food options on campuses exacerbate unhealthy eating behaviors.

While some studies have focused on students in health-related fields, there is a lack of research on broader student populations. This study will provide valuable insights into the health behaviors of young adults in Chittagong, guiding public health interventions and the development of effective health education programs to promote healthier lifestyles.

**1.3 Operational Definitions**

**Physical Activity:** Any bodily movement produced by skeletal muscles that requires energy expenditure, including activities such as working, playing, and traveling.

**Exercise:** A subcategory of physical activity that is planned, structured, repetitive, and aims to improve or maintain one or more components of physical fitness.

**Physical Inactivity:** The lack of sufficient physical activity, recognized by the WHO as a leading risk factor for global mortality, is associated with various health issues such as obesity and chronic diseases.

**Non-communicable Diseases (NCDs):** Chronic diseases that are not caused by infectious agents, including heart disease, diabetes, and cancer, which are the leading causes of death worldwide.

**Obesity:** A condition characterized by excessive body fat, commonly defined by a Body Mass Index (BMI) of 30 or higher, which increases the risk of several chronic diseases.

A condition resulting from an imbalanced diet, including both undernutrition (e.g., underweight) and overnutrition (e.g., overweight/obesity), leading to health issues.

**Body Mass Index (BMI):** A measure used to assess whether a person has a healthy body weight relative to their height

**Malnutrition:** A BMI under 18.5 is considered underweight, while 25 or higher is overweight.

**Health Interventions:** Actions or programs designed to improve public health outcomes, such as promoting healthy eating, increasing physical activity, and reducing malnutrition.

**1.4 Research Question**

What is the nutritional status of young adults in Chattogram, and how does it impact their physical activity levels?

**CHAPTER II**

**LITERATURE REVIEW**

Malnutrition, in all its forms, encompasses undernutrition (wasting, stunting, underweight), inadequate intake of vitamins or minerals, obesity, and the resulting diet-related noncommunicable diseases. The global burden of malnutrition has serious and long-lasting developmental, economic, social, and medical consequences for individuals, families, communities, and countries (17). While adult nutritional status can be assessed in various ways, the most widely used indicator is BMI, as it is inexpensive, non-invasive, and suitable for large-scale surveys. As such, BMI is the most established anthropometric measure for evaluating adult nutritional status and is often a reliable indicator of both nutritional health and the socio-economic conditions of populations, particularly in developing countries (18) (19) (20).

The consequences of undernutrition in both adults and children are well-documented, with known health risks such as vitamin deficiencies, osteoporosis, decreased immune function, and increased surgical complications (21). Undernutrition is a major risk factor for low productivity, poor health, and mortality. In women, undernutrition leads to poor reproductive health outcomes, and it disproportionately affects the well-being of millions of people in developing countries (22) (17).

Recent studies suggest that overweight and obesity in women increase the risk of pregnancy-related complications, such as gestational diabetes, hypertension, prolonged labor, and cesarean sections (23). Obesity is also a significant risk factor for the development of cardiovascular diseases, altered glucose metabolism, certain cancers, and reduced life expectancy (24). According to the Global Nutrition Report, malnutrition causes a loss of 11 percent of GDP every year in Africa and Asia. These losses exceed the economic losses seen during the 2008–2010 financial crisis. Additionally, in the United States, households with an obese member spend an average of 8 percent more of their annual income on healthcare costs (25). In China, individuals diagnosed with diabetes experience an annual income loss of 16.3 percent (26). Thus, malnutrition, both undernutrition and overnutrition, has not only health but also significant economic consequences. Health professionals have raised concerns about the adverse health outcomes associated with overweight and obesity. Meanwhile, thinness is often idealized, and its associated health risks are not given due attention (27) (28).

Over the past two decades, the importance of physical activity (PA) has been emphasized in the World Health Organization's (WHO) public health agenda. In the 2015 WHO World Report on Ageing and Health, PA was highlighted as a key component of "Healthy Ageing" (29) (30). Despite the many benefits of PA, a survey covering 70 countries between 2002 and 2004 showed that 18.8% of males and 24.5% of females aged 60–69 did not meet the WHO's recommended minimum of 150 minutes of aerobic activity per week. This proportion increased to 42.1% for males aged 80+ and 54.6% for females in the same age group (31).

The level of self-reported PA in older adults varies across studies. For example, data from the Survey of Health, Ageing and Retirement in Europe (SHARE) showed that the prevalence of insufficient PA (defined as engaging in vigorous PA ≤ once a week) in 65–75-year-olds ranged from 55.4% to 83.3% in women and 46.6% to 73.7% in men (32). In a cohort of Australian adults aged 60+, 25.8% met the PA recommendations, while in the US, 43% of older adults aged 50+ met the recommended PA levels, which include activities such as walking, cycling, and household tasks (33)(34). A study in Switzerland found that 44.6% of older adults engaged in habitual PA, such as 30 minutes of daily walking or cycling five or more times a week, though only 9.1% participated in moderate sports or exercise and 18.2% in vigorous activities. As age increased, participation in both moderate and vigorous exercise declined. Interestingly, the youngest age group (50–64 years) was less likely to engage in regular habitual PA than their older counterparts, possibly due to time constraints (35)(36)(37).

One key observation from these studies is that definitions of being active or inactive vary, making direct comparisons between studies challenging. A uniform approach, such as using the WHO's recommended weekly PA level as the threshold for being considered active, could lead to more consistent comparisons. The WHO and other health organizations define PA broadly as "any bodily movement produced by skeletal muscles that results in energy expenditure." This definition includes exercise, occupational tasks, household chores, and recreational activities (38).

Several mechanisms have been proposed to explain the association between sedentary behavior and negative health outcomes, such as reduced time for physical activity, a lower metabolic rate, increased energy intake, and the influence of media promoting unhealthy food choices. These factors may help explain why sedentary behavior and early adolescence physical activity can affect body mass index (BMI) later in life. Other studies have shown an inverse relationship between time spent watching television and cardio-respiratory fitness, suggesting that physical activity is crucial for maintaining a healthy BMI (39)(40)(41)(42).

Physical activity also has significant health benefits. For example, boys who engage in physical activity outside school tend to have lower BMI, and those who do not practice PA are more likely to develop high blood pressure. Adolescents who use active transportation (walking or cycling) are more likely to have a normal waist circumference and higher levels of HDL cholesterol. The most important benefit of PA is its direct correlation with improved physical fitness (43)(44)(45)(46).

Longitudinal studies have demonstrated a strong relationship between low physical fitness levels and a higher risk of being overweight, particularly concerning cardiorespiratory fitness and abdominal strength. Higher cardiorespiratory fitness is associated with a lower prevalence of cardiovascular disease factors, regardless of fatness. In contrast, lower muscle fitness is linked to higher metabolic risk. These findings provide a clear rationale for targeting weight control efforts at young ages. Many prospective studies show that diet and physical activity behaviors significantly influence weight outcomes. Furthermore, weight gain is often associated with reduced physical activity and fitness levels, while lifelong physical activity can help prevent obesity. Understanding the predictors, determinants, and correlates of diet and physical activity is crucial for improving weight management and overall health outcomes (46)(47)(48)(49).

**CHAPTER III**

**RESEARCH METHODOLOGY**

**3.1 Study Objectives**

**General Objective:** The general objective of this study is to assess the nutritional status and physical activity levels of young adults in Chattogram and to explore the relationship between these two factors, along with identifying key determinants that influence both nutritional status and physical activity.

**Specific Objectives:**

* To assess the nutritional status of young adults in Chattogram.
* To evaluate the physical activity levels of young adults in Chattogram.
* To examine the relationship between nutritional status and physical activity levels among young adults in Chattogram.
* To identify the socio demographic factors influencing the physical activity levels of young adults in Chattogram.

**3.2 Conceptual Framework**

**Dependent Variable**

**Independent Variables**

**Socio-Demographic**

Age, Sex, Ethnicity

Family type, Marital Status

Religion, Residence

Educational Status

Occupation

Smoking Habit

Alcohol Consumption

Counseling

Wealth index

Living status

BMI (normal weight, underweight, and overweight/obese)

Physical activity (adequate physical activity and inadequate physical activity)

**3.3 Study Design**

This study employed a descriptive, cross-sectional study design, chosen for its suitability in collecting data randomly on various variables from participants at a single point in time.

**Socio-economic variable:** The socio-economic variables utilized in this study, includes education and cultural factors, occupation, family dynamics, family possessions, home sanitation, economic status, and healthcare access.

**The second part (BMI data):** BMI was calculated using the formula weight (kg)/[height (m)2] and categorized into normal weight (18.5–24.9 kg/m2), underweight (BMI <18.5 kg/m2), and overweight/obese (BMI ≥ 25.0 kg/m2).

**The fourth part (Physical activity data):** The physical activity was categorized based on the level of intensity as adequate physical activity (IPAQ score ≥3000 MET-min/week) and inadequate physical activity (IPAQ score <3000 MET-min/week).

**3.4 Target Population & Sample Population**

This cross-sectional study with a self-administered survey was conducted during September–November 2024 in a convenience sample of young adults aged 18–24 years from Chattogram City, Bangladesh.

**3.5 Study Site & Area**

Chattogram City, Bangladesh.

**3.6 Study Period**

September–November 2024

**3.7 Sample Size**

Hence, the following formula was used for sample size calculation for the first objective:

The formula is: n =

Where, n = estimated sample size

Z = 1.96 (in 95% Confidence Interval)

p = prevalence, 50% (0.50),

q = 1- 0.50 = 0.50,

d = permissible error, 5% (0.05)

So, sample size (n) = {(1.96)2\*0.50\*0.50}/ (0.05)2 = 385.

**3.8 Inclusion Criteria**

Patients age 18–24 years will be approached in Chattogram City. Respondents with given consent who will willingly join or participate in the study will be included.

**3.9 Exclusion Criteria**

Patients who will not match the inclusion criteria or who will not give their consent to participate in the study will not involve in the study.

**3.11 Data Collection Tools**

The primary researcher and research assistants will conduct interviews with the study participants to gather quantitative data. The questionnaire will be encompassed inquiries about demographic and socio-economic details, featuring a combination of open-ended and closed-ended questions.

**3.12 Data Management & Analysis Plan**

Data collection will involve conducting face-to-face interviews. Before initiating data collection, permission will be sought from the respective patients. A comprehensive explanation of the study's purpose will be provided to the respondents. Respondents will receive assurance, from an ethical standpoint, that the content of the interview will remain confidential and will not be disclosed to any unauthorized individuals.

**Data Preparation:** The data will be thoroughly cleaned and prepared for analysis, which includes the identification of missing values, outliers, and any other irregularities within the data.

**Descriptive Statistics:** Descriptive statistics will be calculated for the variables of interest. This will involve determining measures such as the mean, median, standard deviation, and frequency distribution. These calculations will provide insights into the data's distribution and facilitate the identification of outliers or unusual observations.

**Inferential Statistics:** Inferential statistical tests will be conducted to examine the study's hypotheses. These tests may include a chi-square test to assess the association between physical activity and various socioeconomic factors.

**Interpretation of Results:** The results of the statistical tests will be interpreted, taking into consideration elements such as p-values, effect sizes, and confidence intervals. Typically, a p-value below 0.05 is considered indicative of statistical significance, implying that there is less than a 5% probability that the results are due to random chance.

**3.13 Quality Control & Quality Assurance**

Before collecting data from the respondents, a friendly and welcoming environment was established, and the research objectives were clearly communicated to the participants. Throughout the data collection process, an effort was made to engage with the respondents in the local Bangla language.

**3.14 Ethical Considerations**

Written permission will be obtained from the relevant authorities and the respondents before commencing data collection. The investigator will provide the respondents with a detailed explanation of the study's objectives before collecting data.

**3.15 Expected Outcomes**

We anticipate that there is a noteworthy correlation between the physical activity and BMI with various socioeconomic factors.

**3.16 Work Plan**

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| --- | --- | --- | --- | --- | --- | --- |
| **Activities** | **July**  **2024** | **Aug**  **2024** | **Sep**  **2024** | **Oct**  **2024** | **Nov**  **2024** | **Dec**  **2024** |
| **Designing the Study** |  |  |  |  |  |  |
| **Review of Literature** |  |  |  |  |  |  |
| **Development & approval of proposal** |  |  |  |  |  |  |
| **Development of Data Collection Tools** |  |  |  |  |  |  |
| **Pre-testing Questionnaire** |  |  |  |  |  |  |
| **Data Collection, Entry & Analysis** |  |  |  |  |  |  |
| **Report Writing** |  |  |  |  |  |  |
| **Submission & Approval of Thesis** |  |  |  |  |  |  |
| **Printing, Binding, and Submission** |  |  |  |  |  |  |

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**APPENDICES**

**APPENDIX-A**

**CONSENT FORM**

Hello, my name is Muhammed Mostak. I am from the University of Creative Technology, Chittagong (UCTC). We are surveying the situation of “Study on the Nutritional Status and Its Impact on Physical Activity Levels Among Young Adults in Chattogram”. I would like to talk to you about your health and other topics. This interview usually takes about 45 minutes. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know.

|  |  |  |
| --- | --- | --- |
| Can I start interviewing now? Yes No | | |
| Name of Respondent | Signature  (If you are unable to sign, please use your fingerprint) | Date |

**APPENDIX-B**

**CONSENT FORM**

**হ্যালো, আমার নাম মোহাম্মদ মোস্তাক। আমি ইউনিভার্সিটি অফ ক্রিয়েটিভ টেকনোলজি, চট্টগ্রাম (ইউসিটিসি) থেকে এসেছি। আমরা "**চট্টগ্রামের তরুণ প্রাপ্তবয়স্কদের মধ্যে শারীরিক কার্যকলাপ স্তরের পুষ্টির অবস্থা এবং এর প্রভাবের উপর অধ্যয়ন**" এর পরিস্থিতি জরিপ করছি। আমি আপনার স্বাস্থ্য এবং অন্যান্য বিষয় সম্পর্কে আপনার সাথে কথা বলতে চাই। এই সাক্ষাত্কারটি সাধারণত প্রায় 45 মিনিট সময় নেয়। আমরা প্রাপ্ত সমস্ত তথ্য কঠোরভাবে গোপনীয় এবং বেনামী থাকবে। আপনি যদি কোনো প্রশ্নের উত্তর না দিতে চান বা ইন্টারভিউ বন্ধ করতে চান তাহলে অনুগ্রহ করে আমাকে জানান।**

|  |  |  |
| --- | --- | --- |
| আমি কি এখন সাক্ষাৎকার নেয়া শুরু করতে পারি? হ্যাঁ না | | |
| উত্তরদাতার নাম | উত্তরদাতার স্বাক্ষর  (আপনি স্বাক্ষর করতে অক্ষম হলে, আপনার আঙ্গুলের ছাপ ব্যবহার করুন) | তারিখ |

**APPENDIX-C**

**QUESTIONNAIRE**

**ABOUT YOU**

Before you begin, we would like to ask you to answer a few general questions about yourself: by circling the correct answer or by filling in the space provided.

**Socio-Demographic:**

What is your **age**?

What is your **gender**? Male Female

What is your **family type**?

What is your **occupation**?

What is your family **monthly income?**

What is your family **expenditure?**

Do you involve in **extracurricular activities**?

Do you have access to internet?

What is your **marital status**?

What is your **religion**?

Where is your **residence**?

What is the highest **education** you received?

Do you have **smoking/alcohol habit**?

**Body Mass Index:**

What is your height in inches?

----

What is your weight in kg?

---

**Physically activity:**

Think about all the **vigorous** and **moderate** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

**0.** Do you currently have a job or do any unpaid work (volunteer work) outside your home? [If No, please go to question # B7.]

▪ Yes ▪No

*The questions B1-B6 are about all the physical activity you did in the* ***last 7 days*** *as part of your paid or unpaid work. This does not include traveling to and from work.*

**1.** During the **last 7 days**, on how many days did you do **vigorous** physical activities like

heavy lifting, digging, heavy construction, or climbing up stairs as part of your work?

Think about only those physical activities that you did for at least 10 minutes at a time. [If No vigorous job-related physical activity, go to question # B3.]

--------days per week

**2.** How much time did you usually spend on one of those days doing **vigorous** physical

activities as part of your work?

-------- minutes per day

**3.** Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** physical activities

like carrying light loads **as part of your work**? Please do not include walking. [If No moderate job-related physical activity, go to question # B5.]

--------days per week

**4.** How much time did you usually spend on one of those days doing **moderate** physical

activities as part of your work?

-------- minutes per day

**5.** During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time **as part of your work**? Please do not count any walking you did to travel to or from

work. [If No job-related walking, go to question # B8.]

--------days per week

**6.** How much time did you usually spend on one of those days **walking** as part of your

work?

-------- minutes per day

*The questions B7-B12 are about how you traveled from place to place, including to places like work, stores, movies, and so on.*

**7.** During the **last 7 days**, on how many days did you **travel in a motor vehicle** like a train, bus, car, or tram? [If No traveling in a motor vehicle, go to question # B9.]

--------days per week

**8.** How much time did you usually spend on one of those days **traveling** in a train, bus,

car, tram, or other kind of motor vehicle?

-------- minutes per day

**9.** During the **last 7 days**, on how many days did you **bicycle** for at least 10 minutes at a time to go **from place to place**? [If No bicycling from place to place, go to question # B11.]

--------days per week

**10.** How much time did you usually spend on one of those days to **bicycle** from place to place?

-------- minutes per day

**11.** During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time to go **from place to place**? [If No walking from place to place, go to question # B13.]

--------days per week

**12.** How much time did you usually spend on one of those days **walking** from place to

place?

-------- minutes per day

*The questions B13-B18 are about some of the physical activities you might have done in the* ***last 7 days*** *in and around your home, like housework, gardening, yard work, general maintenance work, and caring for your family.*

**13.** Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, chopping wood, shoveling snow, or digging **in the garden or yard**? [If No vigorous activity in garden or yard, go to question # B15.]

--------days per week

**14.** How much time did you usually spend on one of those days doing **vigorous** physical activities in the garden or yard?

-------- minutes per day

**15.** Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, sweeping, washing windows, and raking **in the garden or yard**? [If No moderate activity in garden or yard, go to question # B17.]

--------days per week

**16.** How much time did you usually spend on one of those days doing **moderate** physical activities in the garden or yard?

-------- minutes per day

**17.** Once again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, washing windows, scrubbing floors and sweeping **inside your home**? [If No moderate activity inside home, go to question # B19.]

--------days per week

**18.** How much time did you usually spend on one of those days doing **moderate** physical activities inside your home?

-------- minutes per day

*The questions B19-B24 are about all the physical activities that you did in the* ***last 7 days*** *solely for recreation, sport, exercise or leisure. Please do not include any activities you have already mentioned.*

**19.** Not counting any walking, you have already mentioned, during the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time **in your leisure time**? [If No walking in leisure time, go to question # B21.]

--------days per week

**20.** How much time did you usually spend on one of those days **walking** in your leisure time?

-------- minutes per day

**21.** Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like aerobics, running, fast bicycling, or fast swimming **in your leisure time**? [If No vigorous activity in leisure time, go to question # B23.]

--------days per week

**22.** How much time did you usually spend on one of those days doing **vigorous** physical activities in your leisure time?

-------- minutes per day

**23.** Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles tennis **in your leisure time**? [If No moderate activity in leisure time, go to question # B25.]

--------days per week

**24.** How much time did you usually spend on one of those days doing **moderate** physical activities in your leisure time?

-------- minutes per day

*The last questions B25-B26 are about the time you spend sitting while at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading or sitting or lying down to watch television. Do not include any time spent sitting in a motor vehicle that you have already told about.*

**25.** During the **last 7 days**, how much time did you usually spend **sitting (at home)** on a **weekday**?

-------- minutes per day

**26.** During the **last 7 days**, how much time did you usually spend **sitting (at home)** on a **weekend day**?

-------- minutes per day