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Pharmacoepidemiological Study of Physical Activity Preferences in General Population

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Abstract

This study investigates the physical activity preferences and behaviors of 300 participants, focusing on age, gender, and occupation. Utilizing a cross-sectional, mixed-methods design, data were collected through an online survey assessing physical activity preferences, frequency, intensity, motivations, and post-activity habits. Most participants were students aged 17–30, with a smaller group comprising working professionals aged 31–50. Yoga and cardio workouts emerged as the most popular activities, particularly among younger participants and students, with balanced interest across genders. Daily exercise and moderate-intensity activity were the most common, with students being more active than professionals. Fitness and weight management were the primary motivators, especially for younger males and students, while health concerns such as hypertension and diabetes were less prevalent. The morning was the preferred time for physical activity, and many participants used technology to track their progress. Post-activity, fruits were the most favored snack. These findings highlight significant trends in physical activity preferences, suggesting that younger individuals, particularly students, are more inclined toward shorter, moderate-intensity exercises and technological tools for tracking. The insights gained from this survey can help inform targeted health interventions and fitness programs aimed at promoting physical activity and healthy lifestyles, especially among younger populations.

Keywords: Pharmacoepidemiology, Physical Activity, General Population, Health Outcomes, Public Strategies

Introduction

As defined by the WHO (World Health Organization), physical activity includes any movement that uses energy and involves muscles, such as walking, playing sports, or biking. Engaging in these activities, even at a non-professional level, promotes health and prevents diseases like diabetes and heart issues. The WHO provides guidelines for the recommended amount of physical activity across different age groups. Insufficient exercise increases the likelihood of obesity,

hypertension, and depression. Studies show that regular physical activity can extend lifespan and reduce the risk of heart disease. [1,2]

As people age, they often become less active, leading to health problems like diabetes and cardiovascular diseases. Research indicates that maintaining an active lifestyle helps prevent these conditions and enhances overall well-being.[3] Both age and weight influence activity levels; older adults, especially those who are overweight, tend to have more health issues and are less active. However, a balanced diet and regular exercise can manage weight, reducing disease risk and mortality. [3,4]

Prioritizing physical activity is vital due to its health benefits, including disease prevention and improved mental health. Promoting active lifestyles counters increasing sedentary behaviors, offering significant public health benefits and opportunities for healthy aging. Physical education supports this by fostering fitness and critical thinking. Ultimately, emphasizing physical activity aims to enhance quality of life, reduce sedentary habits, and boost vitality for individuals and communities.[5] Aerobic exercises like walking, swimming, jogging, and biking are moderate and sustained, while anaerobic exercises like sprinting, weightlifting, and calisthenics are intense and brief. Each type offers unique benefits, catering to various health goals.[6]

Exercise is good for your health, and lots of people make it a regular part of their lives to stay healthy. Whether you want to avoid getting sick, have more energy, or get ready for a special event, there are tons of different exercises to choose from. They come in all shapes and sizes, with different levels of intensity and focus areas.[7] One way to group them is into aerobic and anaerobic exercises. Aerobic exercises are things like walking, swimming, jogging, and biking, done at a moderate pace for a while. Anaerobic exercises, on the other hand, are more intense and short-lived, like sprinting, lifting weights, and doing calisthenics. Everyone has their favorite type of exercise, but it's worth thinking about which one will help you reach your goals the best.[8]

Over two millennia ago, Hippocrates emphasized that "positive health requires an understanding of the body's fundamental constitution." He also stressed the importance of exercise, noting that its effects should be understood and warning that a lack of physical activity could lead to illness. Even earlier, around 600 BC in India, Sushrut advocated for moderate daily exercise, recommending it as a treatment for obesity and diabetes. He also suggested that physical activity promoted brain health.[9] These ancient teachings were based on intuition and folk wisdom rather than empirical evidence. It wasn't until the mid-20th century that scientific research on exercise, health, and medicine began to emerge. One early focus of this research was the rising incidence of heart attacks and how lifestyle factors contributed to this trend. Since then, studies have proliferated, emphasizing the benefits of physical activity and the dangers of modern sedentary lifestyles. Such investigations are foundational to epidemiological research today.[10]

Methodology

Study Design: This study employed a mixed-methods approach to examine physical activity preferences and health outcomes through an online survey. Using a cross-sectional design, both quantitative and qualitative methods were integrated to collect comprehensive data on physical activity preferences and the factors influencing them. Respondents participated by answering multiple-choice questions.

Study Population

The study included 300 participants who were selected to take part. All participants were required to complete and sign a consent form, ensuring they were informed of their confidentiality rights and their ability to withdraw from the study at any time without consequence. They were fully briefed on the objectives of the questionnaire and allowed to ask questions before participation. Participation was entirely voluntary and began only after obtaining informed consent.

Sampling Method

The sample for this survey was gathered through a blend of convenience and snowball sampling methods. Initially, convenience sampling was used to recruit participants who were easily accessible and willing to take part, allowing for a quick collection of preliminary data. To further increase the sample size and diversity, snowball sampling was employed, where existing participants were encouraged to refer others from their networks. This combined approach helped ensure the inclusion of a wider range of individuals, enhancing the reliability and representativeness of the study sample.[12]

Eligibility Criteria

The study population consisted of students and working professionals. Only individuals who engaged in regular exercise or physical activity were considered. Participants with knowledge of physical activity were included. The age criteria for the study were defined as follows: students aged 17 to 30 years, and working professionals aged 31 to 50 years.

Data Collection and Measurement

An online survey was conducted using Google Forms, gathering responses from 300 participants. Recruitment was carried out through social media platforms such as WhatsApp and email, utilizing a combination of convenience and snowball sampling techniques. Participants completed a comprehensive questionnaire assessing their physical activity preferences, frequency, duration, and intensity. Demographic information and health status were also collected. The survey, consisting of nine questions, focused on physical activity and covered topics such as preferred activities, ideal exercise times, intensity levels, motivation, time spent on activities, preferred times for exercising, use of technology, changes in routine, and post-activity habits.

Data analysis

Data were collected, categorized, and coded using Microsoft Excel (Microsoft Corporation). Descriptive statistics were applied to summarize the sample by gender, age, and occupation, providing total frequencies and percentages. The mean, standard deviation, frequencies, and percentages for each survey item were calculated using the Statistical Package for the Social Sciences (SPSS) software, version 29.0.2.0 (IBM Corporation, Armonk, New York). A t-test was conducted to assess significant differences between survey questions and demographic variables.

Result

Descriptive Analysis: Table 1 indicates that most participants were male, with males comprising a larger portion of the sample than females. Most respondents were students, reflecting a predominantly academic population, while a smaller proportion were working professionals. In terms of age distribution, most participants were young adults between 17 and 30 years old, with only a few aged between 31 and 50 years. This data highlights the youthful and predominantly student-based nature of the survey sample.

Demographic Characteristics (N=300)

The survey included both males and females, with males forming the majority of the participants. In terms of occupation, most participants were students, while a smaller portion were working professionals. The age distribution showed that the majority of participants were younger, falling between the ages of 17 and 30, while a smaller group was older, within the 31 to 50 age range.

Table 1: Demographic Information (N=300)

Category	Sub-Category	Frequency	Percentage
Gender	Male	174	58%
	Female	126	42%
Occupation	Students	229	76.67%
	Working Professional	71	23.33%
Age	17-30	268	89.33%
	31-50	32	10.67%

N=300, Values was expressed in frequency & percentage

Assessment of IPAQ Based on Frequency and Percentage

Table 2 presents the results from a survey of 300 participants, highlighting various aspects of their physical activity preferences. Yoga emerged as the most preferred activity, followed by cardio and aerobic exercises, while a smaller percentage of respondents engaged in Zumba and other activities. Most participants reported exercising several days per week, with a significant portion exercising either daily or only once a week. The majority engaged in moderate-intensity activities, while fewer individuals participated in low- or high-intensity exercises. Participants typically dedicated 15 to 30 minutes per session to physical activity, with fewer individuals allocating longer durations. Fitness was identified as the primary motivation for physical activity, followed by concerns related to obesity, hypertension, and diabetes, while a smaller group cited stroke prevention. The majority of participants preferred to exercise in the morning, with fewer opting for evening or nighttime workouts, and very few choosing afternoon sessions. A notable proportion of respondents reported using technology to track their physical activity, although the majority did not. When reflecting on changes in their routine over the past week, a significant number noted either an increase or consistency in their activity levels. After exercising, fruits were the most commonly consumed snack, followed by energy drinks and dairy products, with a small percentage opting for other food items.

Table 2: International Physical Activity Questionnaires (N =300)

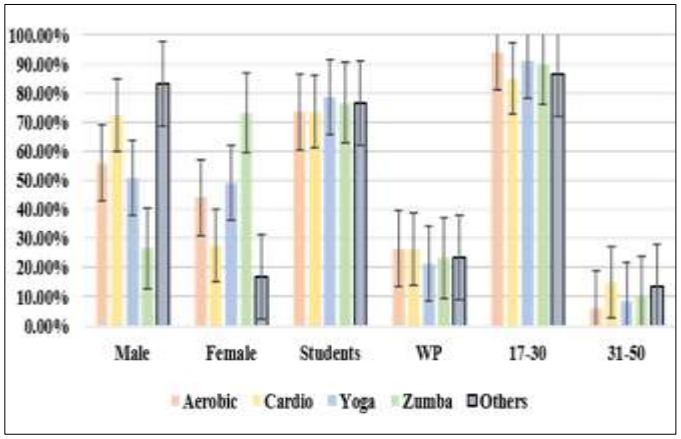
Q. No	Questions	Options	n (%)
Q1.	Which physical activity did you the most?	Aerobic	34 (11.33%)
		Cardio	80 (26.67%)
		Yoga	126 (42%)
		Zumba	30 (10%)
		Others	30 (10%)
Q2.	What is routine of your performance for exercise?	Daily	100(33.33%)
		Once a week	91 (30.33%)
		Several days a week	109(36.33%)
Q3.	What intensity did you perform your physical activity?	Low intensity	46 (15.33%)
		Moderate intensity	212(70.67%)
		High intensity	42 (14%)
Q4.	How much time	15 Minutes	118(39.33%)

	on average do you spend on activity?	30 Minutes	120 (40%)
		45 Minutes	44 (14.67%)
		60 Minutes	18 (6%)
Q5.	What is motivation for doing the physical activity?	Obesity	100(33.33%)
		Diabetes	12 (4%)
		Hypertension	46 (15.33%)
		Stroke	08 (2.67%)
		Fitness	134(44.67%)
Q6.	At what time do you prefer your physical activity in a day?	Morning	188(62.67%)
		Afternoon	08 (2.67%)
		Evening	92 (30.67%)
		Night	12 (4%)
Q7.	Do you use any technology to check or track your physical activity?	Yes	123 (41%)
		No	177 (59%)
Q8.	How has your physical routine changed from last week?	Increased	101(33.67%)
		Decreased	63 (21%)
		Constant	136(45.33%)
Q9.	After physical activity what do you prefer?	Fruits	163(54.33%)
		Dairy Products	57 (19%)
		Energy Drinks	63 (21%)
		Others	17 (5.67%)

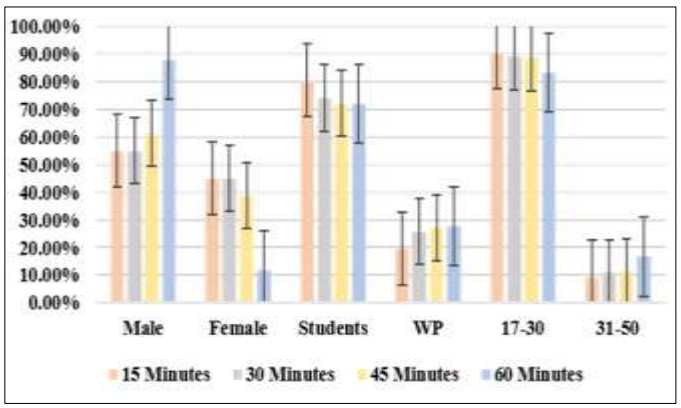
n= no of respondents & %.

Assessment of Questionnaire Based on Responses

In Fig 1 The analysis of 300 participants' physical activity preferences revealed significant trends across age, gender, and occupation. Yoga emerged as the most popular activity, particularly among younger participants (ages 17–30) and students, with balanced interest between males and females. Cardio and aerobic exercises were popular among younger males, while Zumba was favored by younger females. In terms of activity frequency, daily exercise was most common, especially among younger males and students. Moderate-intensity activity was preferred, while low-intensity was favored by younger females. Time spent on physical activity varied, with 15 minutes being the most common duration, particularly among younger males and students. Motivations for physical activity included fitness and obesity management, especially among younger males. Hypertension, diabetes, and stroke prevention were less common but noted motivators, with a slight preference among students. In summary, younger males and students were the most active group across various parameters, with preferences for more intense and frequent activity.



Graph 1:



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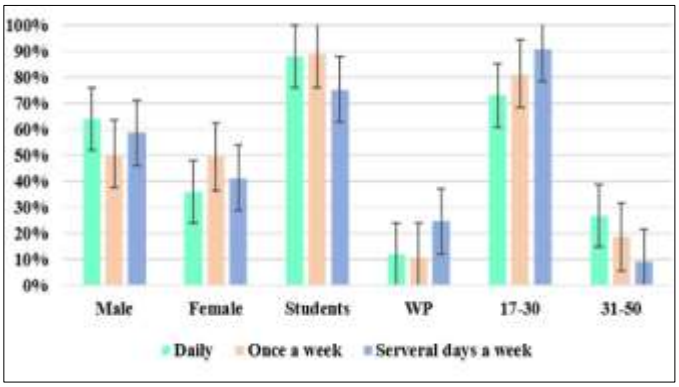
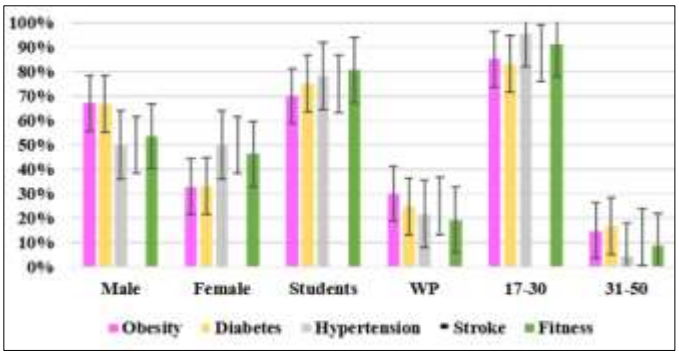
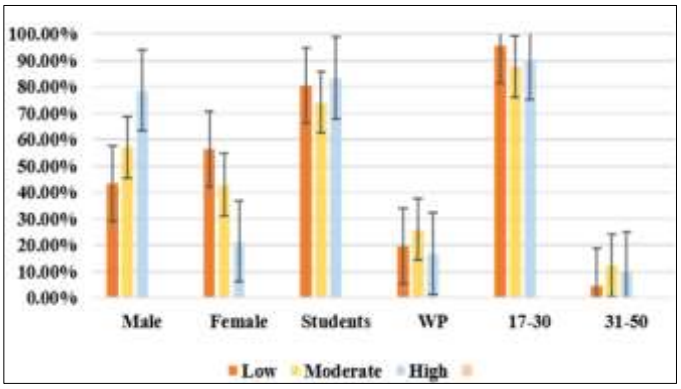


Graph 3:



Graph 4:



Graph 5:

Fig. 1: Assessment of Questionnaire Based on Responses a) Which physical activity did you prefer the most? b) What is the routine of your preference for exercise? c) What intensity did you perform your physical activity? d) How much time on average do you spend on activity? e) What is your motivation for doing the physical activity?

The analysis of physical activity preferences across demographics revealed that most participants, particularly younger individuals and students, preferred morning exercise, with males favoring evening sessions slightly more than females. Students were more likely to use technology to track their activity compared to working professionals, with younger participants being the primary users. Many participants, especially younger individuals and students, reported an increase in physical activity, while working professionals were more likely to experience a decrease. Post-activity preferences showed fruits as the most popular choice across all groups, with males and students also favoring dairy products and energy drinks.

Table 3: Prefer Time across Demographics (n=300)

Q6.	n	Category	Sub Category	Responses and Percentage				Mean ± S.D.	Sig
				Morning	Afternoon	Evening	Night		
	300	Gender	Male	103 (54.79%)	06 (75%)	57 (61.96%)	08 (66.67%)	2.12 ± 0.89	0.43
			Female	85 (45.21%)	02 (25%)	35 (38.04%)	04 (33.33%)	2.10 ± 0.87	
		Occupation	Students	153 (80.85%)	05 (62.5%)	61 (66.3%)	11 (91.67%)	2.11 ± 0.88	0.30
			Working Professional	35 (19.15%)	03 (37.5%)	31 (33.7%)	01 (8.33%)	2.15 ± 0.84	
		Age	17-30	173 (92.02%)	06 (75%)	77 (83.7%)	12 (100%)	2.09 ± 0.8	0.42
			31-50	15 (7.98%)	02 (25%)	15 (16.3%)	0 (0%)	2.38 ± 0.83	

Values were expressed in frequency with Mean ± S.D.: Data were analyzed using a t-test where $p \leq 0.05$

Table 4: Use of Technology among Demographics (n=300)

Q7.	n	Category	Sub Category	Responses and Percentage		Mean ± S.D.	Sig
				Yes	No		
	300	Gender	Male	67 (54.47%)	107(60.45%)	1.13 ± 0.33	0.21
			Female	56 (45.53%)	70 (39.55%)	1.18 ± 0.38	
		Occupation	Students	94 (76.42%)	135 (76.27%)	1.16 ± 0.36	<0.01
			Working Professional	29 (23.58%)	42 (23.73%)	1.03 ± 1.77	
		Age	17-30	111 (90.24%)	157 (88.7%)	1.13 ± 0.34	0.002
			31-50	12 (9.76%)	20(11.3%)	1.25 ± 0.44	

Table 5: Changes in Physical Activity Routine (n=300)

Q8.	n	Category	Sub Category	Responses and Percentage			Mean ± S.D.	Sig
				Increased	Decreased	Constant		
	300	Gender	Male	66 (65.35%)	35 (55.56%)	73 (53.68%)	2.01 ± 0.52	0.12
			Female	35 (34.65%)	28 (44.44%)	63 (46.32%)	1.95 ± 0.57	
		Occupation	Students	80 (79.21%)	41 (65.08%)	108(79.41%)	1.99 ± 0.55	1.27
			Working	21 (20.79%)	22 (34.92%)	28 (20.59%)	2.0 ± 0.4	

			Professional					
		Age	17-30	91 (90.1%)	55 (87.3%)	122 (89.71%)	2.01 ± 0.53	0.79
			31-50	10 (9.9%)	08 (12.7%)	14 (10.29%)	1.78 ± 0.5	

Values were expressed in frequency with Mean ± S.D.: Data were analyzed using a t-test where p≤ 0.05

Table 6: Post Activity Preferences Among Demographics (n =300)

Q9.	n	Category	Sub Category	Responses and Percentage				Mean ± S.D.	Sig
				Fruits	Dairy Products	Energy Drinks	Others		
	300	Gender	Male	83 (50.93%)	45 (78.95%)	35 (55.56%)	11 (64.71%)	1.70 ± 0.83	0.36
			Female	80 (49.07%)	12 (21.05%)	28 (44.44%)	06 (35.29%)	1.74 ± 0.93	
		Occupation	Students	133 (81.62%)	40 (70.18%)	45 (71.43%)	11 (64.71%)	1.68 ± 0.88	0.72
			Working Professional	30 (18.38%)	17 (29.82%)	18 (28.57%)	06 (35.29%)	2.00 ± 0.91	
		Age	17-30	152 (93.29%)	47 (82.46%)	55 (87.3%)	14 (82.35%)	1.73 ± 0.86	0.92
			31-50	11 (6.71%)	10 (17.54%)	08 (12.7%)	03 (17.65%)	1.56 ± 0.91	

Values were expressed in frequency with Mean ± S.D.: Data were analyzed using a t-test where p≤ 0.05.

Discussion

The survey analyzed the physical activity preferences of 300 participants, focusing on differences across age, gender, and occupation. Notably, yoga emerged as the most popular activity, especially among younger participants (ages 17–30) and students. This trend suggested that yoga's flexibility, minimal equipment requirements, and stress-relief benefits resonated with younger individuals. Additionally, the balanced interest in yoga across both genders reflected its broad appeal. Cardio workouts were also popular, particularly among younger males and students, indicating a demographic that tended to favor higher-energy exercises for cardiovascular health and fitness. Interestingly, aerobics and Zumba showed gender differences, with aerobics being more common among younger males and Zumba particularly appealing to younger females. These differences might have been tied to preferences for group-based, rhythm-driven activities. The frequency of physical activity also showed distinct patterns. Daily exercise was preferred mainly by younger participants, males, and students, suggesting that these groups may have had more flexible schedules or prioritized fitness. Participants who exercised once per week or several days per week were also predominantly younger and mostly students, though with a more balanced gender

distribution. Intensity preferences leaned toward moderate-intensity activities, especially for younger participants and males, with students favoring them more than professionals. High-intensity exercises, though less popular, were chosen primarily by younger males and students, indicating that only a subset of participants was drawn to more rigorous physical activity. In terms of duration, the most common choice was 15 minutes, especially among younger males and students. Thirty-minute sessions were also popular, though fewer participants opted for 45 or 60-minute durations, suggesting a preference for shorter, more manageable activity intervals. Participants were primarily motivated by fitness and obesity management, particularly younger males and students, indicating that physical health and appearance were key drivers. While some participants cited managing hypertension, diabetes, or preventing strokes as motivations, these health concerns were less prominent overall.

The preferred time of day for physical activity was the morning, with younger participants, males, and students favoring early exercise sessions. Evening and afternoon sessions were less common, though still of interest, particularly among younger males. Regarding technology use, a significant portion of participants reported using devices or apps to track their activity, especially younger males and students. However, many participants did not use technology, which may have reflected differences in familiarity with or access to tech-based tools. Changes in physical activity routines revealed that most participants increased their activity levels, especially younger males and students, possibly reflecting a growing focus on health. A smaller group reported decreased activity levels, primarily among younger males. Post-physical activity preferences indicated a clear inclination toward fruits, which were the most popular choice across both genders, particularly among students. Dairy products and energy drinks were less favored, while a small group selected other options, with younger males and students again forming the majority.

Conclusion

The survey highlighted significant trends in physical activity preferences across different demographics. Younger participants, particularly students, were more active, favored shorter and moderate-intensity activities, and were more inclined to use technology to track their progress. Yoga, cardio workouts, and moderate-intensity activities dominated the activity landscape, with daily exercise being the most common frequency. Fitness and obesity management emerged as the primary motivations for physical activity, with health concerns playing a smaller role. Morning was the preferred time for exercise, and fruits were the most favored post-activity snack. These insights can inform targeted health interventions and fitness programs, particularly for younger populations and students, by focusing on the types of activities, durations, and motivations that resonated most with these groups.

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