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Prevalence of Hypotension Among Gymmers After Using Treadmill

Ayush Raj, Dr. Nidhi Rawat PT, Dr. Pushpendra Yaduvanshi

Career Point University, India

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ABSTRACT:

To finding out on identifying the prevalence of hypotension among gym-goers after using a treadmill. The findings aim to help fitness Professionals and Physiotherapists ensure safer exercise practices and prevent health risks in gym settings

A cross-sectional study was conducted in Kota, Rajasthan, involving 100 gym-goers aged between 18 to 30 years. Participants who exercised at least 4 days per week and met the inclusion criteria were recruited using random sampling. Blood pressure was recorded before and at intervals post-treadmill exercise. Data were collected via Google Forms and physical monitoring, and analysed using statistical tools to assess mean, median, mode, and standard deviation.

- Blood Pressure readings (before and after treadmill use) Heart Rate changes
- Severity grading of hypotension (none, moderate, severe)
- Out of 60 analysed responses showing symptoms:
- 14 participants (23.33%) showed no hypotension,
- 24 participants (40%) showed moderate hypotension, and
- 22 participants (36.67%) experienced severe hypotension.

Participants in the 21–25 age group showed higher susceptibility, with severe hypotension linked to rapid BP drops post-exercise.

The findings confirm that a significant portion of gym-goers experience hypotensive episodes following treadmill use. This highlights the need for pre- and post-exercise blood pressure monitoring, trainer awareness, and safer exercise protocols to ensure cardiovascular safety in gyms.

Key Words- Post-exercise hypotension, treadmill, gym-goers, blood pressure, cardiovascular response, exercise safety.

INTRODUCTION:

Exercise training has been recommended as an important non-pharmacological intervention for the prevention and treatment of hypertension. Supervised and home exercise programs have been shown to reduce hypertension, cardiovascular risk, and cardiovascular morbidity.

Common side effects of nitro glycerine are well known, and even anticipated. Serious, even life-threatening reactions are rare, but here we report a case of nitro glycerine-induced bradycardia, hypotension, and asystole·

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PEH is largely mediated by decreased cardiac output. The increased TVC that causes PEH is predominantly attributed to increased vascular conductance (VC) resulting from vasodilation in exercise and non-exercise limbs.

There are about 700 skeletal muscles in the human body, including roughly 200 that are serious bone movers and another 100 little muscles of hands, feet, head and face.

Left untreated hypertension can cause a cascade of problems. Once it has developed, it can last a lifetime. Many of the outcomes of hypertension, such as a heart attack or stroke, occur before it is discovered. Hypertension increases the workload on the heart requiring it to need more oxygen to sustain normal function.

Primary prevention of hypertension and CVD requires the understanding of a population approach to the reduction of major modifiable risk factors such as, physical inactivity. The goal of a population approach in the primary prevention of hypertension is to shift the community distribution of BP toward lower levels of biological normality.

In comparison with rest (e.g., pre-exercise), post-exercise hypotension is characterized by a persistent drop in systemic vascular resistance that is not completely offset by increases in cardiac output.

LITREATURE REVIEW:

The effects of exercise at various intensities (70%, 80%, 90%, and 100% of VO2 at the ventilatory threshold) on systolic blood pressure (SBP) and diastolic blood pressure (DBP) were examined.

In the studied, the phenomenon of post-exercise hypotension (PEH) was investigated to understand the underlying mechanisms responsible for the reduction in blood pressure following exercise.

The Author reviewed, the post-exercise hypotensive response (PEH) following strength training (ST) was explored, with a focus on the factors that influence the magnitude of blood pressure reduction.

The Author studied, an educational case report was presented to demonstrate how to implement the progression of a Full-Body In-Bed Gym program for an 80-year-old individual with stable pharmacological treatment for high blood pressure, as well as anti-cholesterol medication, vitamins, and dietetic measures.

METHODOLOGY

The ethical consent for this prevalence study was granted by the ethical gym trainer authorities in Kota, Rajasthan. The study was conducted in a gym-based setting within the city, focusing on gym-goers who regularly use treadmills. A total of 100 participants were included in the study, selected through a random allocation sampling method. The research employed a cross-sectional design to assess the prevalence of hypotension following treadmill exercise within half an hour.

Inclusion Criteria

- Adults aged 18-30 years.
- Individuals who engage in regular treadmill exercise at least 4 times per week.
- No known history of cardiovascular diseases or conditions affecting blood pressure.
- Ability to provide informed consent and participate in the study.
- Person goes regularly gym minimum 4 days in a week.
- Willingness to complete the treadmill exercise protocol and undergo blood pressure assessments.

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Exclusion Criteria

- Individuals with a history of cardiovascular diseases (e.g., hypertension, heart failure).
- Pregnant women or individuals planning to become pregnant during the study.
- Those taking medications that affect blood pressure (e.g., antihypertensives).
- Individuals with known metabolic or endocrine disorders (e.g., diabetes, thyroid disorders).

RESULT:

Severity	mean	median	S.d	mode
severe	47.22	45	10.73	45
moderate	19.33	17.5	5.65	17
no pain	3.769	4	3.285	0

Table: Mean Median Mode

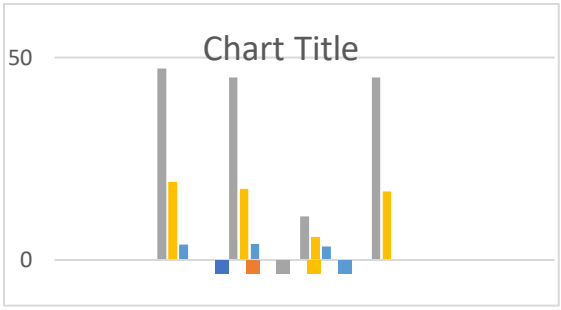

Figure: Chart Based on The Age of Severity.

age	subject	O.H.Q	Mean
17	1	34	34
18	4	66	16.5
19	5	128	25.6
20	10	239	23.9
21	18	420	23.33
22	7	220	31.42
23	2	36	18
24	3	64	21.33
25	11	399	36.27

Table: Age Related Mean

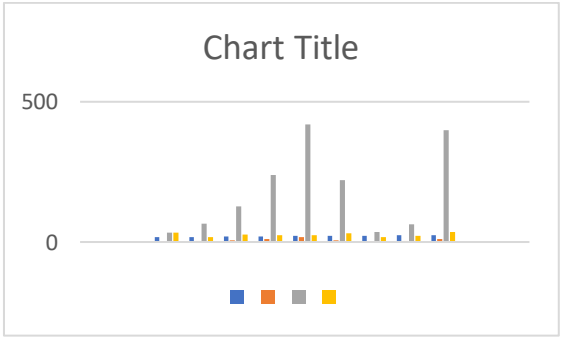

Figure: Chart Based on Responses

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The findings of this study clearly indicate a significant prevalence of hypotensive responses among gym-goers following treadmill use. Out of the participants assessed, 14 individuals (23.33%) did not experience any hypotension, suggesting good cardiovascular stability. However, 24 participants (40%) experienced moderate hypotension, which may reflect underlying physiological adaptation issues or transient vascular responses. Furthermore, 22 participants (36.67%) experienced severe hypotension, a result that underscores the importance of post-exercise monitoring. These results align with existing literature, reinforcing that post-exercise hypotension (PEH) is a real and measurable phenomenon, particularly in those engaging in aerobic treadmill-based workouts. The high proportion of moderate to severe cases (66.67%) raises serious safety concerns regarding unsupervised exercise in gym environments. This highlights the urgent need for gyms to implement routine post-workout blood pressure monitoring, ensure adequate hydration guidance, and promote effective cool-down strategies to minimize health risks.

CONCLUSION

This study concludes that a majority of gym-goers (66.67%) experience hypotension post treadmill use, with 24% showing moderate and 22% severe symptoms. Only 14% of participants reported no hypotensive symptoms.

This underlines the importance of cardiovascular assessment and supervision in gym settings, particularly for individuals engaged in high-intensity treadmill workouts.

Limitation of Study

Small sample size

Some of the subject withdraw with study during survey

Some have no changes they were excluded after that

Future Study-

We can do research with large sample size along with proper intervention.

It can be done over youngers or elderlies.

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