INFLUENCE OF LIFESTYLE AND EMPLOYMENT STATUS ON THE CARDIOVASCULAR BENEFITS OF OMEGA 3 FATTY ACIDS IN VEGETARIAN POPULATIONS

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Abstract:

Vegetarian diets are often associated with lower cardiovascular disease (CVD) risk, yet lifestyle factors and employment status can significantly influence cardiovascular health outcomes. The benefits of Omega 3 fatty acids, especially in reducing inflammation, improving lipid profiles, and lowering blood pressure, are well-documented. However, their efficacy may vary based on an individual's lifestyle and work status, which could affect stress levels, physical activity, and dietary habits. This study explores how lifestyle factors and employment status influence the cardiovascular benefits of Omega 3 fatty acids among vegetarian patients in Bhopal, Madhya Pradesh. Using a 12-week Omega 3 supplementation protocol with 200 participants divided by employment status (working vs. non-working) and lifestyle (sedentary vs. active), the study assesses cardiovascular markers such as cholesterol levels, blood pressure, and inflammatory markers. Results indicate that working individuals with an active lifestyle experience more pronounced cardiovascular improvements compared to their sedentary or non-working counterparts. The findings underscore the importance of lifestyle and work-related factors in enhancing Omega 3 efficacy for cardiovascular health. This research has implications for personalized dietary strategies, especially for populations following plant-based diets.

Key words : Cardiovascular disease (CVD), Lifestyle, Omega 3

Introduction:

Cardiovascular diseases (CVDs) remain among the most prevalent chronic conditions worldwide, with multiple studies highlighting the potential for dietary Omega 3 fatty acids to support cardiovascular health. While vegetarian diets are generally associated with reduced risk of CVD, vegetarians often rely on alpha-linolenic acid (ALA), a plant-based Omega 3 fatty acid. ALA's effectiveness in providing cardiovascular benefits is influenced by various external factors, such as lifestyle and employment status, which impact stress levels, physical activity, and dietary routines.

Employment status and lifestyle factors contribute significantly to cardiovascular health. Physically active individuals typically exhibit lower blood pressure and improved lipid profiles, while occupational stress has been linked to adverse heart health outcomes. This study aims to explore the combined effect of Omega 3 supplementation, lifestyle, and employment status on cardiovascular health in vegetarian individuals, providing insights for tailored nutritional strategies.

Methodology:

The study utilized a randomized controlled design with 200 vegetarian participants diagnosed with cardiovascular risk factors. Participants were categorized based on employment status (working vs. non-working) and lifestyle (active vs. sedentary), creating four groups:

1. Working and active
2. Working and sedentary
3. Non-working and active
4. Non-working and sedentary

Each participant received a 1000 mg daily supplement of ALA-based Omega 3 for 12 weeks.

Data Collection:

Cardiovascular markers, including:

- **Lipid Profile:** Total cholesterol, LDL, HDL, and triglycerides.
- **Blood Pressure:** Systolic and diastolic.
- **Inflammation Marker:** C-reactive protein (CRP).

Statistical Analysis:

Pre- and post-intervention values were compared using paired t-tests within groups. ANOVA was employed to identify significant differences in cardiovascular outcomes across the four lifestyle and employment status groups.

Results:

The analysis indicated a significant improvement in cardiovascular markers, with results varying by group:

1. **Cholesterol and Lipid Profiles:**
    - Working and active participants exhibited the most significant reductions in total cholesterol (-15%) and LDL cholesterol (-12%), along with a 10% increase in HDL.
    - Non-working, sedentary participants showed the least improvement, with only a 5% reduction in cholesterol and minimal changes in HDL.
2. **Blood Pressure:**
    - Working, active participants saw the largest reductions in systolic (-10 mmHg) and diastolic (-6 mmHg) blood pressure.
    - Sedentary non-working participants showed a modest decline of 4 mmHg in systolic blood pressure with no significant change in diastolic pressure.

3. **Inflammation:**
    - CRP levels decreased most significantly in the working and active group (-25%), while sedentary individuals, regardless of employment status, experienced a less pronounced reduction.

These findings suggest that an active lifestyle amplifies the cardiovascular benefits of Omega 3 fatty acids, particularly among working individuals.

Discussion:

The results indicate that lifestyle and employment status play a critical role in the cardiovascular efficacy of Omega 3 fatty acids in vegetarian patients. Working, active participants experienced the greatest cardiovascular improvements, likely due to a combination of higher physical activity, which is associated with enhanced lipid metabolism, and potentially higher metabolic demands related to occupational activity. Sedentary individuals, regardless of employment status, showed comparatively less benefit from Omega 3 supplementation, possibly due to lower physical activity and lifestyle-induced risk factors.

These findings are consistent with previous research indicating that physical activity can augment the positive effects of Omega 3 fatty acids on lipid profiles and blood pressure. Employment status, which may influence stress levels and overall lifestyle, also appears to impact Omega 3 efficacy, underscoring the need for targeted interventions based on work and lifestyle characteristics.

The study highlights the importance of a holistic approach to cardiovascular health, where dietary supplements like Omega 3 should be accompanied by lifestyle modifications. For vegetarian populations, particularly those at risk of inadequate Omega 3 intake, a combination of ALA supplementation and an active lifestyle may be essential to achieving optimal cardiovascular outcomes.

Conclusion:

This study concludes that lifestyle and employment status significantly influence the cardiovascular benefits of Omega 3 fatty acids among vegetarian patients. Working, active individuals benefit the most from Omega 3 supplementation, experiencing significant improvements in cholesterol, blood pressure, and inflammation markers. These findings suggest that Omega 3 supplementation strategies for cardiovascular health should be customized according to an individual's lifestyle and employment characteristics. Future research should further investigate the interactions between lifestyle factors and plant-based Omega 3 efficacy to optimize cardiovascular health outcomes in vegetarian populations.

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