

# Prevalence of Hand-Arm Vibration Syndrome in Chefs

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**Abstract- Background:** Hand-Arm Vibration Syndrome (HAVS) is an occupational disorder involving vascular, neurological, and musculoskeletal impairments due to prolonged exposure to vibrating tools. Although extensively studied in industrial workers, limited literature exists on HAVS among culinary professionals who frequently use vibrating kitchen equipment.

**Objective:** To determine the prevalence of Hand-Arm Vibration Syndrome and associated factors among professional chefs.

**Methodology:** A cross-sectional observational study was conducted among 97 professional chefs aged 25–50 years with more than five years of experience. Data were collected using a Hand-Arm Vibration Screening Questionnaire and Allen's Test. Descriptive statistics and inferential analysis were performed using SPSS.

**Results:** Out of 97 participants, 42% demonstrated positive Allen's Test results, indicating vascular involvement. Based on the screening questionnaire, 69% reported HAVS symptoms ranging from mild to severe. No statistically significant association was observed between daily working hours and HAVS severity ( $p > 0.05$ ).

**Conclusion:** The study reveals a considerable prevalence of HAVS symptoms among chefs. Preventive strategies focusing on ergonomics, tool handling, and early screening are recommended to reduce occupational risk.

**Keywords:** Hand-Arm Vibration Syndrome, HAVS, Chefs, Occupational Health, Vibration Exposure.

## I. INTRODUCTION

Hand-Arm Vibration Syndrome (HAVS) is a work-related condition affecting the vascular, neurological, and musculoskeletal systems of the upper limb due to prolonged exposure to vibration. While traditionally associated with industrial occupations such as construction and mining, modern culinary practices involve frequent use of vibrating tools such as blenders, grinders, and mixers.

Chefs are exposed to repetitive hand movements, forceful gripping, and prolonged tool usage, potentially increasing the risk of vibration-related

disorders. Despite these risk factors, HAVS remains under-recognized in the culinary profession, prompting the need for focused occupational health research.

## II. NEED FOR THE STUDY

Most HAVS research focuses on heavy industrial workers, with minimal attention to hospitality professionals. Identifying the prevalence of HAVS among chefs will help in early diagnosis, prevention, and ergonomic modification in culinary workplaces.

## III. AIM AND OBJECTIVES

**Aim:** To assess the prevalence of Hand-Arm Vibration Syndrome among professional chefs.

**Objectives:**

- To determine the prevalence of HAVS symptoms
- To assess vascular involvement using Allen's Test
- To analyse the association between work exposure and HAVS symptoms
- To create awareness regarding occupational hazards among chefs

## IV. MATERIALS AND METHODOLOGY

**Study Design:** Cross-sectional observational study

**Sample Size:** 97 chefs

**Sampling Method:** Convenience sampling

**Duration:** 6 months

**Inclusion Criteria:**

- Chefs with  $\geq 5$  years of experience
- Age group: 25–50 years

**Exclusion Criteria:**

- History of upper limb fracture or surgery
- Tumors or neurological disorders of the upper limb

Outcome Measures:

- Hand-Arm Vibration Screening Questionnaire
- Allen's Test

## V. STATISTICAL ANALYSIS

Data were analysed using SPSS software. Descriptive statistics (mean, standard deviation, frequency, percentage) were used. Inferential statistics included independent t-tests and chi-square tests. A p-value < 0.05 was considered statistically significant.

## VI. RESULTS

- 52% participants were female and 48% male
- 42% showed positive Allen's Test results
- 69% reported HAVS symptoms (mild to severe)
- No significant association was found between daily work hours and HAVS severity ( $p = 0.792$ )

## VII. DISCUSSION

The findings indicate a substantial presence of HAVS symptoms among chefs, highlighting a previously under-recognized occupational risk. The absence of a significant relationship between daily work hours and symptom severity suggests that cumulative exposure, ergonomics, and tool vibration intensity may play a more critical role.

These findings align with existing literature emphasizing HAVS as a multifactorial condition. Early screening and preventive strategies are essential in non-industrial occupations such as the culinary profession.

## VIII. CONCLUSION

The study concludes that HAVS is prevalent among chefs, with a significant number showing vascular and sensorineural symptoms. Ergonomic interventions, education, and routine occupational health screening are recommended to prevent long-term disability.

## IX. CONFLICT OF INTEREST

The authors declare no conflict of interest.

## X. STRENGTHS AND LIMITATIONS

Strength: Focus on an under-researched occupational group using standardized assessment tools.

Limitation: Cross-sectional design and reliance on self-reported data.

## XI. FUTURE SCOPE

Longitudinal studies with objective vibration measurements are recommended to establish causal relationships and develop targeted preventive strategies.

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