

# PREVALENCE OF ONYCHOCRYPTOSIS AND ITS ASSOCIATION WITH OCCUPATIONAL FOOTWEAR PRACTICES AMONG URBAN WORKERS IN KARACHI: A CROSS-SECTIONAL STUDY

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## INTRODUCTION

Onychocryptosis ( ingrown toenail; IGTN) is a prevalent podiatric disorder characterized by the lateral or medial nail plate penetrating the periungual soft tissue, resulting in pain, inflammation, and secondary infection. Globally, IGTN has been reported in approximately 2.5-5% of primary care consultations, with higher prevalence observed among occupationally active adults. Workers engaged in occupations requiring sustained bipedal activity are considered a high-risk population. However, population-specific prevalence data from low- and middle-income urban settings, particularly in Pakistan, remain limited.

## OBJECTIVES

- To determine the prevalence of IGTN among occupationally active adults in Karachi.
- To evaluate its association with footwear characteristics.

## METHODOLOGY

- A descriptive cross-sectional study conducted among 200 male and female workers (aged 18-60) recruited from multiple occupational sectors across Karachi.
- A structured, pre-validated questionnaire was used to capture demographic characteristics, occupational variables, footwear habits, and self-reported symptomatology.
- Participants reporting two or more IGTN-consistent symptoms (periungual pain, erythema, nail-fold tenderness) underwent standardized clinical examination to confirm diagnosis.
- Data were analyzed using SPSS v.26.0. Pearson's chi-square test was applied to assess associations between footwear-related factors and IGTN occurrence.
- Statistical significance defined at  $p < 0.05$ .

## RESULTS

- Of 200 workers evaluated, 48(24.0%) were diagnosed with IGTN.
- The predominant presenting complaints were pain on ambulation (79.2%) and discomfort during nail trimming (64.6%).
- Tight-fitting footwear was identified in 61.5% of affected individuals, while narrow toe-box design was reported in 54.2%.
- Daily footwear wear exceeding eight hours was documented in 68.8% of IGTN cases.
- Chi-square analysis demonstrated statistically significant associations between IGTN and tight footwear ( $\chi^2 = 9.74$ ,  $p = 0.002$ ) and narrow toe-box design ( $\chi^2 = 7.31$ ,  $p = 0.007$ ).
- No statistically significant association was identified between IGTN and occupational sector ( $\chi^2 = 2.18$ ,  $p = 0.336$ ) or shift pattern ( $\chi^2 = 1.05$ ,  $p = 0.591$ ).

Chart showing the prevalence of IGTN in Karachites

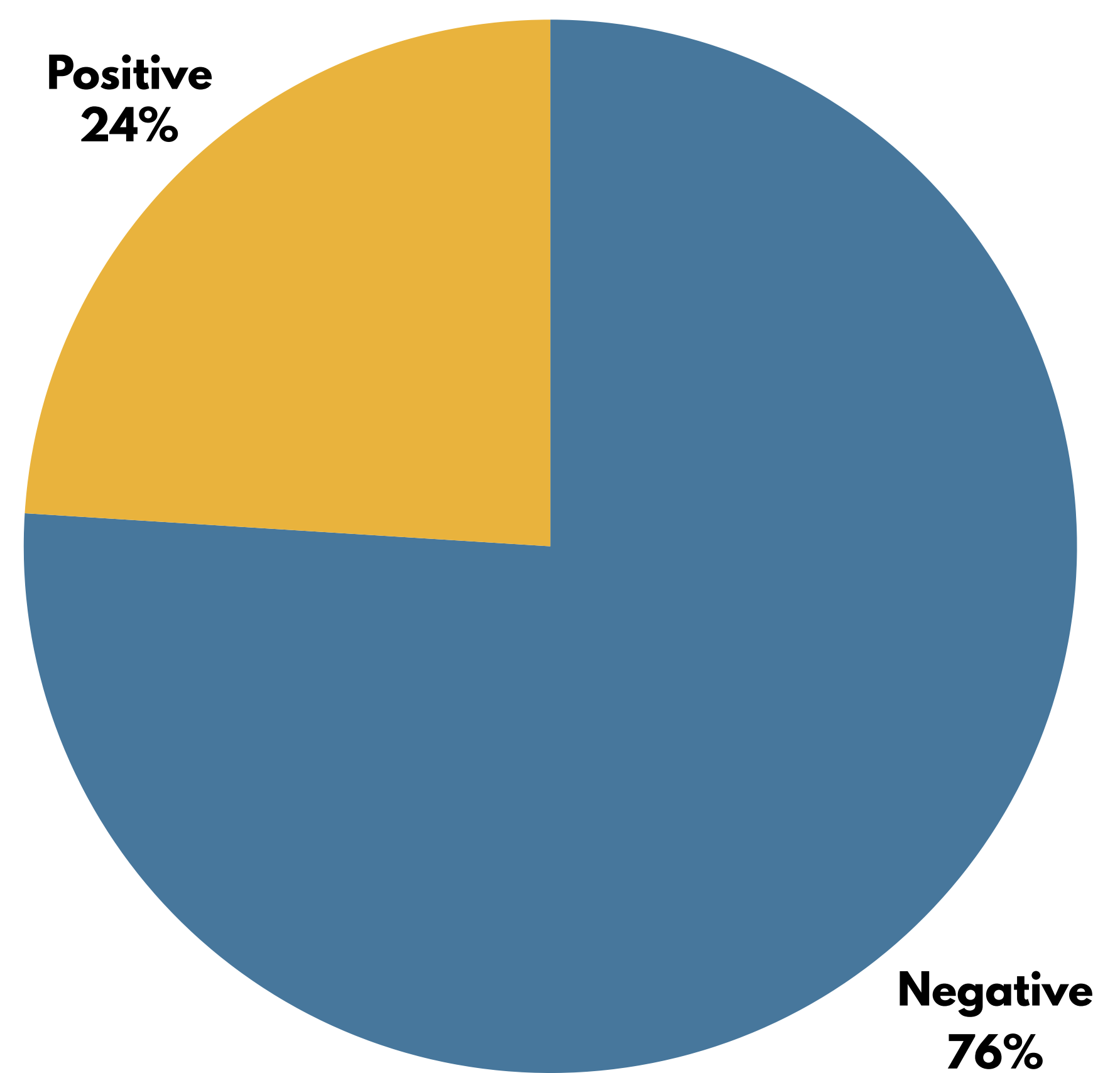


Table 1: Distribution of Footwear Characteristics among IGTN Cases

VARIABLE	FREQUENCY
Tight-fitting footwear	61.5%
Narrow toe-box design	54.2%
Footwear use > 8 hours/day	68.8%

Percentage of patient complaining pain and discomfort during IGTN

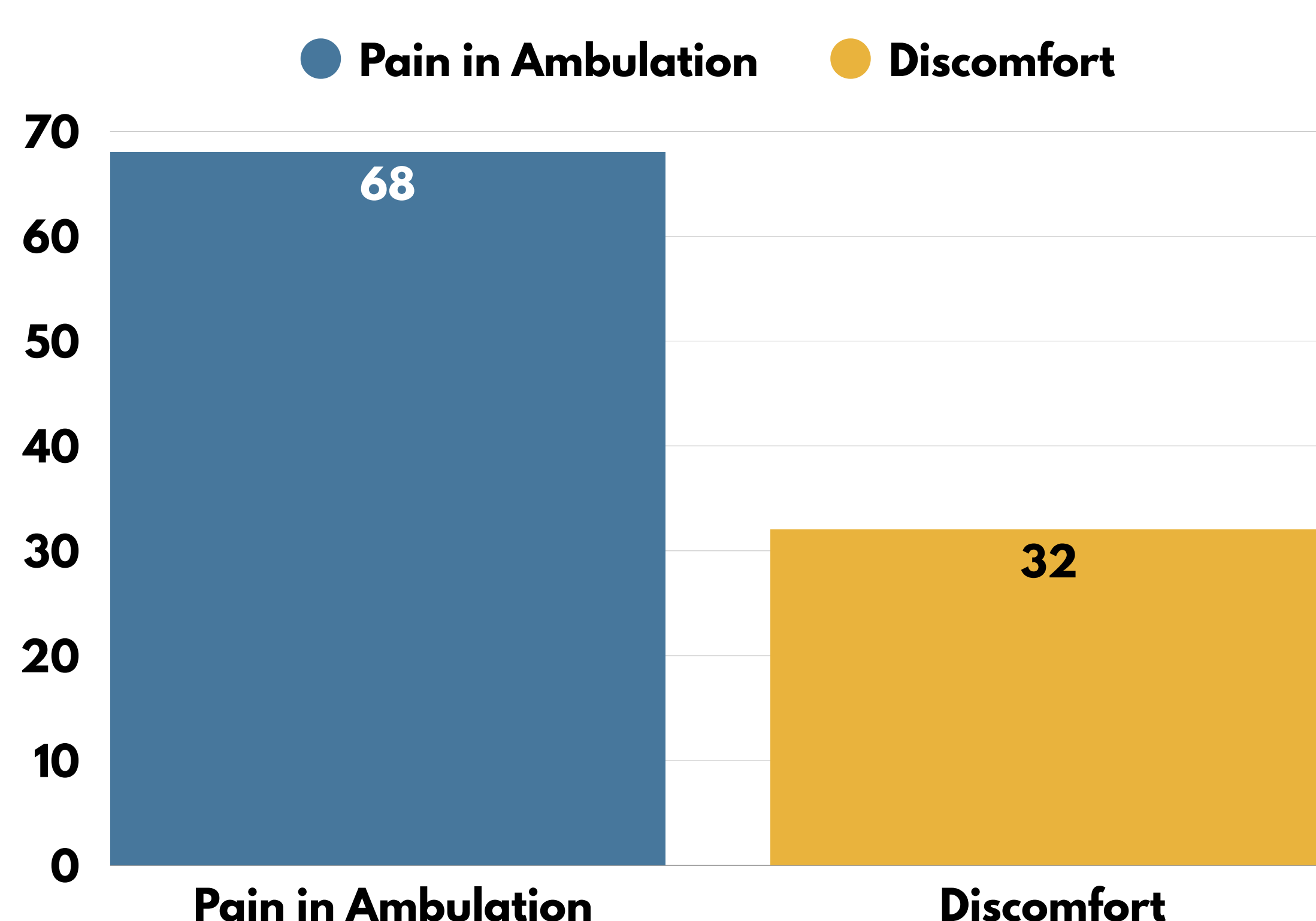


Table 2: Association of Risk Factors with IGTN ( Chi- Square Analysis)

VARIABLE	CHI-SQUARE( $\chi^2$ )	p-VALUE	STATISTICAL SIGNIFICANCE
Tight-fitting footwear	9.74	0.002	Significant
Narrow toe-box design	7.31	0.007	Significant
Occupational sector	2.18	0.336	Not significant
Shift pattern	1.05	0.592	Not significant

**CONCLUSION:** Onychocryptosis constitutes a significant occupational foot health burden among workers in Karachi, with a prevalence of 24.0%.