Knowledge and Practices in Preventing Screen Time-Induced Eye Disorders Among Computer-Based Office Workers

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Introduction

Office workers who use screens for extended periods of time are more likely to develop Computer Vision Syndrome (CVS) and Digital Eye Strain (DES), which can lead to blurred vision, dry eyes, and weariness. Ergonomic modifications and other preventive measures are still neglected despite knowledge .

This study evaluates knowledge and practices among computer-based workers in Galle, Sri Lanka, to improve workplace eye health strategies.

Objectives

- To assess the level of knowledge among office workers about screen time-induced eye disorders.

- To describe the common practices among computer-based office workers in preventing screen time-induced eye disorders among computer office workers.

- To describe the association between the level of knowledge & preventive practices among computer based office workers in preventing screen time-induced eye disorders among computer office workers.

Data Description

Data was collected via self-administered questionnaires from **224 office workers** in Galle, Sri Lanka.

The survey covered demographics, knowledge of digital eye strain, preventive practices, symptoms, and vision care.

Responses were analyzed to evaluate awareness, behavior patterns, and knowledge-practice gaps regarding screen-related eye health.

Demographic Variables

- Age (in years)
- Gender
- Ethnicity
- Religion
- Marital Status
- Education Level
- Job role
- Working Experience

Variables under Awareness of screen-induced eye disorder

- Awareness of screen time-induced eye disorders
- Awareness of symptoms of eye disorders
- Knowledge of recommended screen break duration
- Awareness of the 20-20-20 rule
- Knowledge of correct screen-to-eye distance

To analyze the first objective, a composite knowledge score was created using five selected knowledge-related questions.

For each question, responses were coded as 1 for "Yes" (indicating correct knowledge) and 0 for both "No" and "Not Sure" (indicating lack of knowledge or uncertainty).

Response	point
Yes	1
No	0
Not sure	0

The individual scores were then summed to generate a new variable, knowledge score, ranging from 0 to 5

Variables under practices of preventing screen time-induced eye disorders

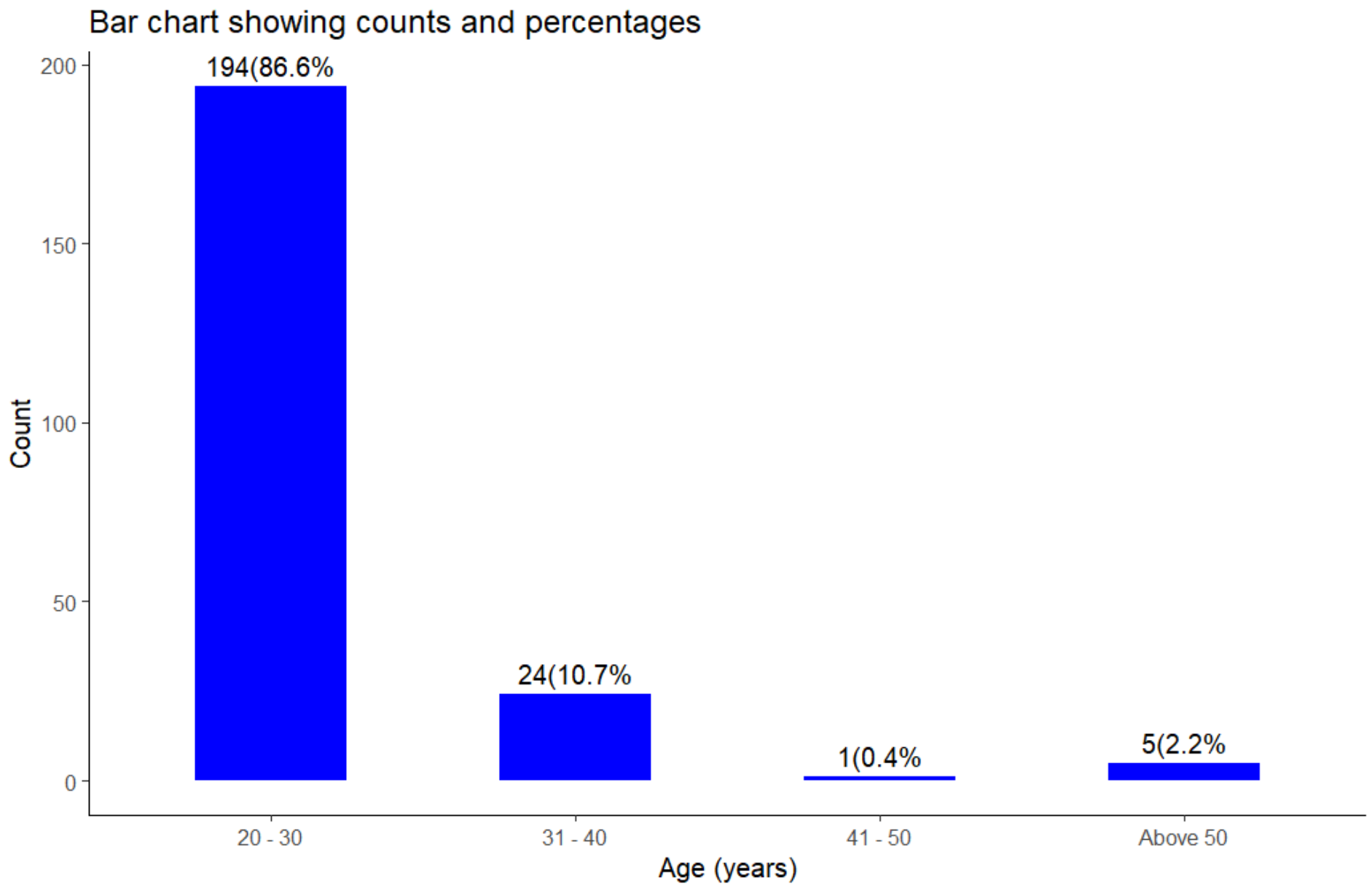
- Take regular screen breaks
- Adjust brightness/contrast
- Maintain proper posture
- Conscious blinking
- Follow 20-20-20 rule
- Clean your screen to reduce glare
- Position screen to avoid glare from windows or lights
- Adjusting sitting posture to reduce eye strain

Each response to the practice-related questions was scored on an ordinal scale to reflect the degree of adherence to recommended preventive behaviors. Responses of **“Always”** or **“Yes”** were assigned **1 point**, indicating consistent practice. Responses of **“Sometimes”** were given **0.5 points**, while **“Rarely”** responses received **0.25 points**, reflecting partial or infrequent engagement. Responses of **“Never”** or **“No”** were assigned **0 points**, indicating no practice of the behavior.

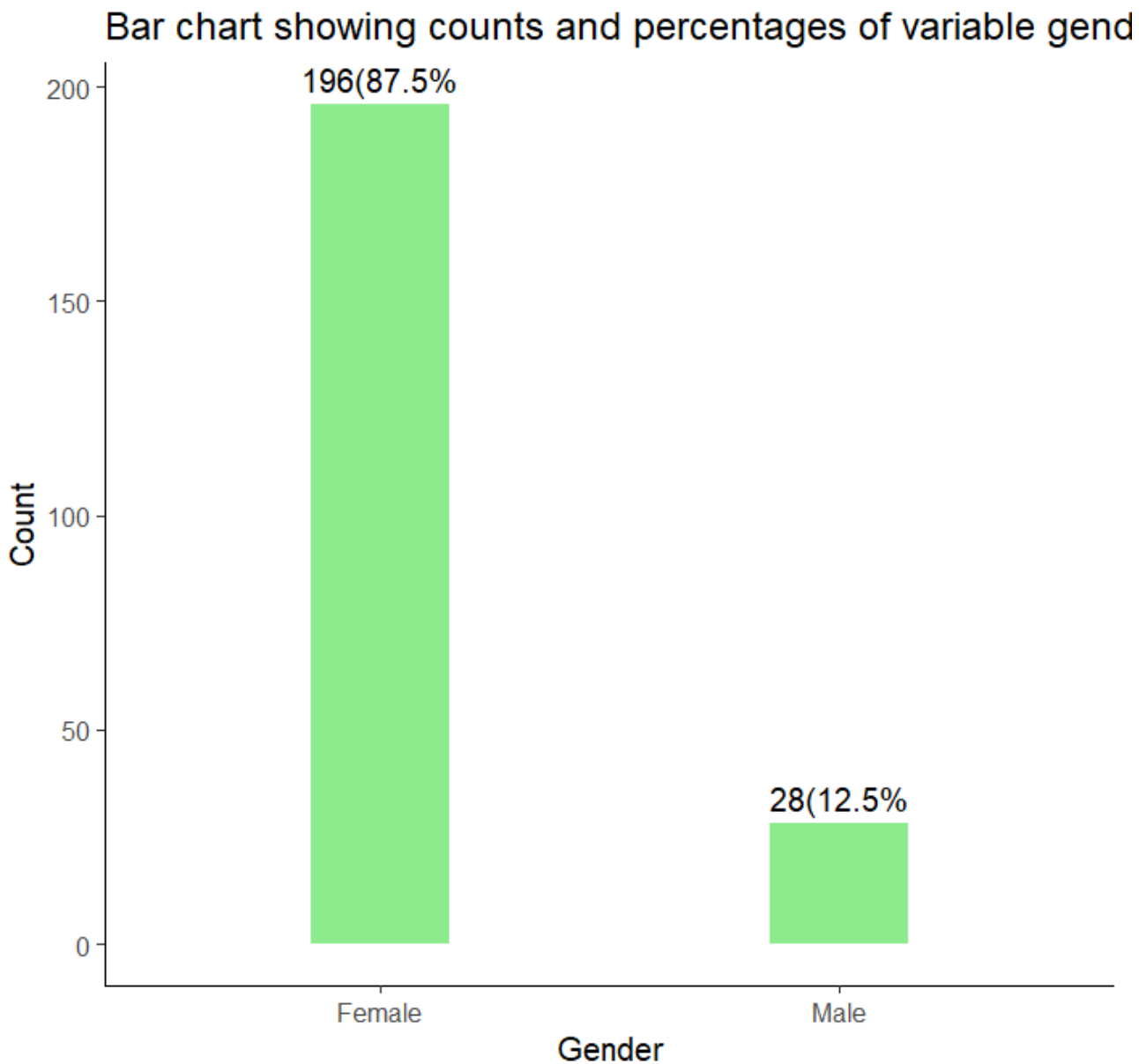
Response	Point
Always / Yes	1
Sometimes	0.5
Rarely	0.25
Never / No	0

Exploratory Data Analysis of Demographic variables

Age (in years)


Bar chart showing counts and percentages
200
150
100
50
0
Count
194(86.6%
24(10.7%
1(0.4%
5(2.2%
20 - 30
31 - 40
41 - 50
Above 50
Age (years)

Gender


Bar chart showing counts and percentages of variable gend
196(87.5%
28(12.5%
200
150
100
50
0
Count
Female
Male
Gender

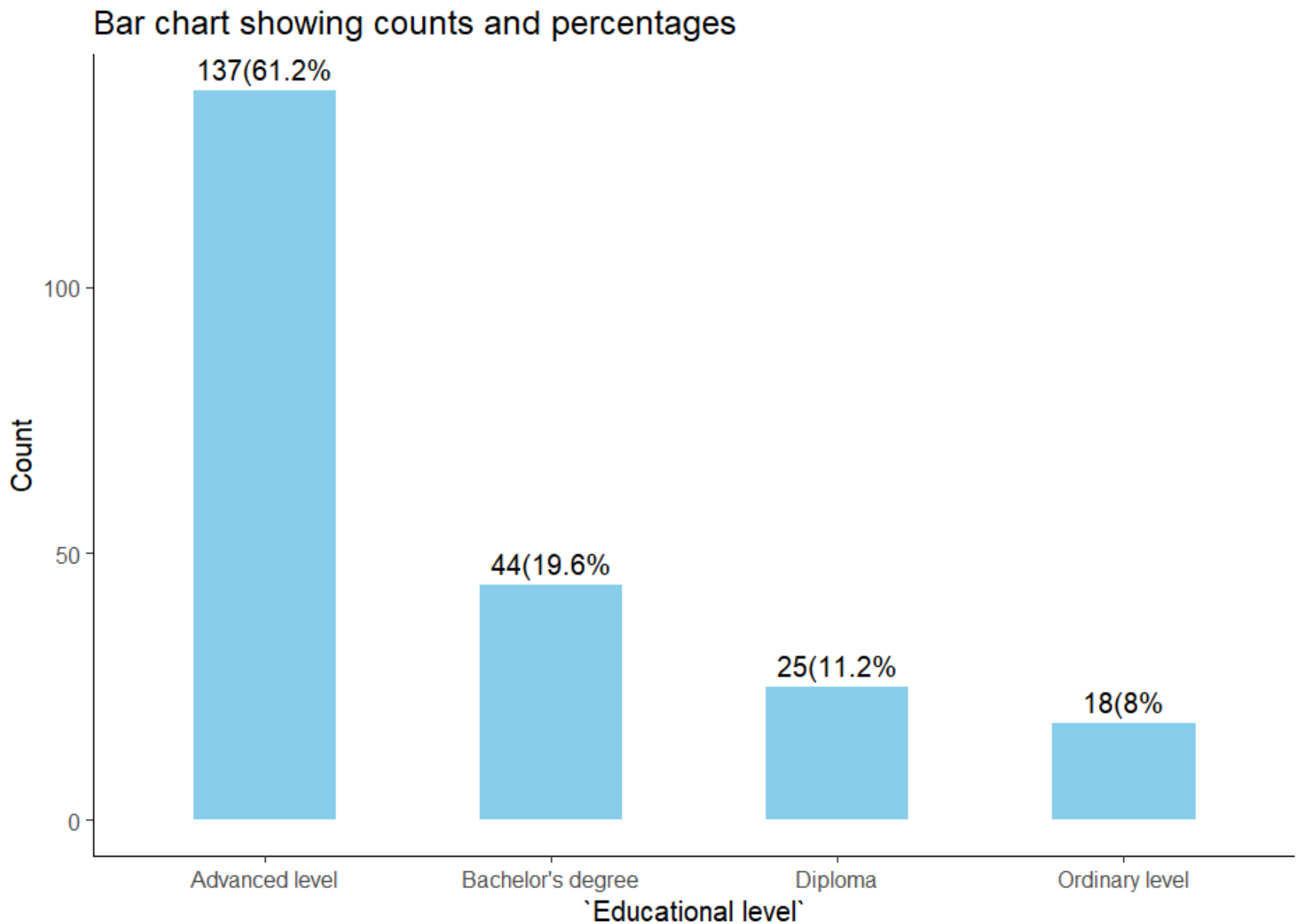
Ethnicity

In this data set, all participants reported the same ethnicity, meaning the group is ethnically the same. This shows that the sample likely comes from one main ethnic group, possibly reflecting the local population.

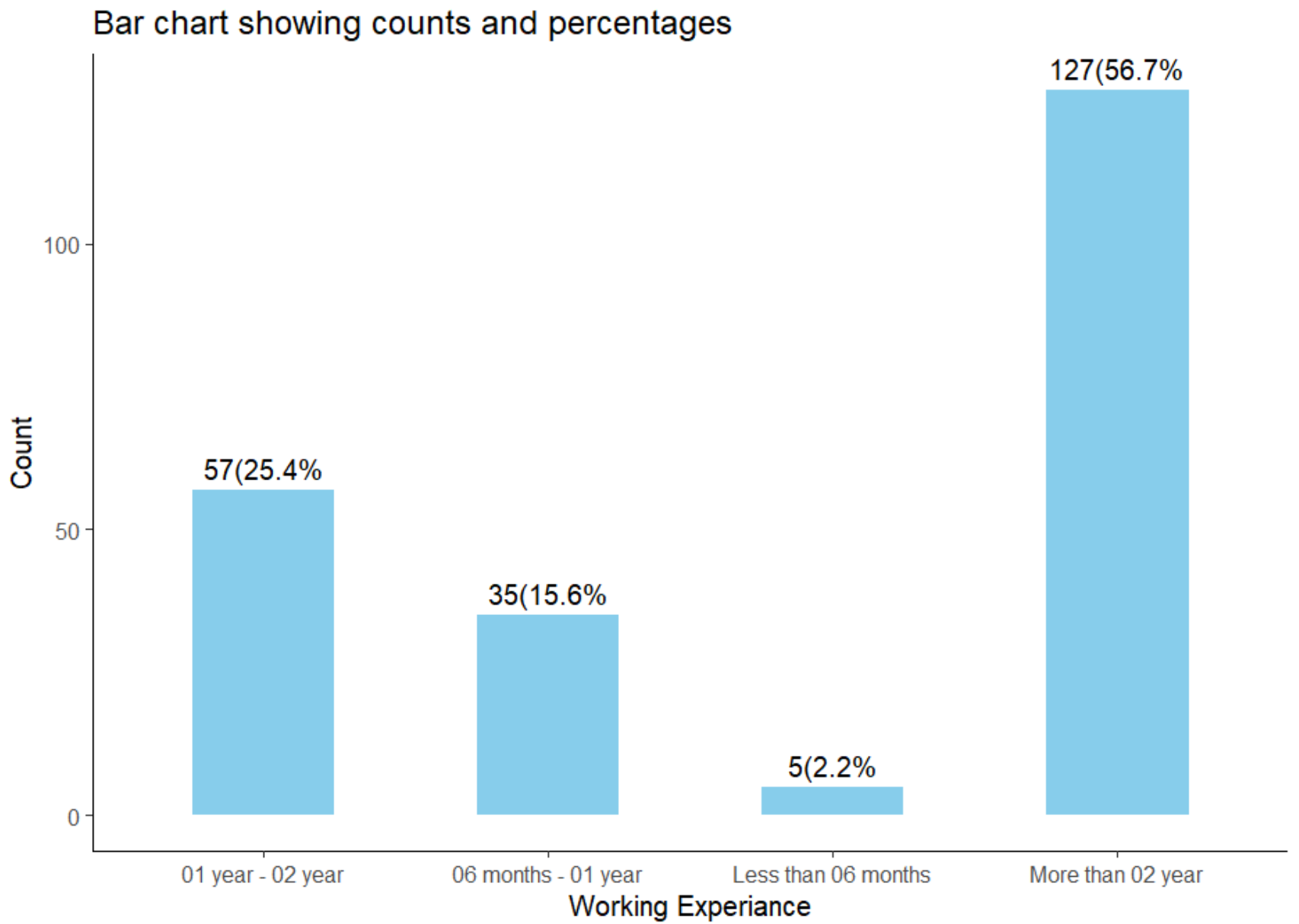
Religion

Similarly, all participants reported the same religion, so there is no difference in religious background within the sample. This suggests the group may come from a place where most people follow the same religion. Because everyone gave the same answer, the religion variable can’t be used to compare groups or study differences

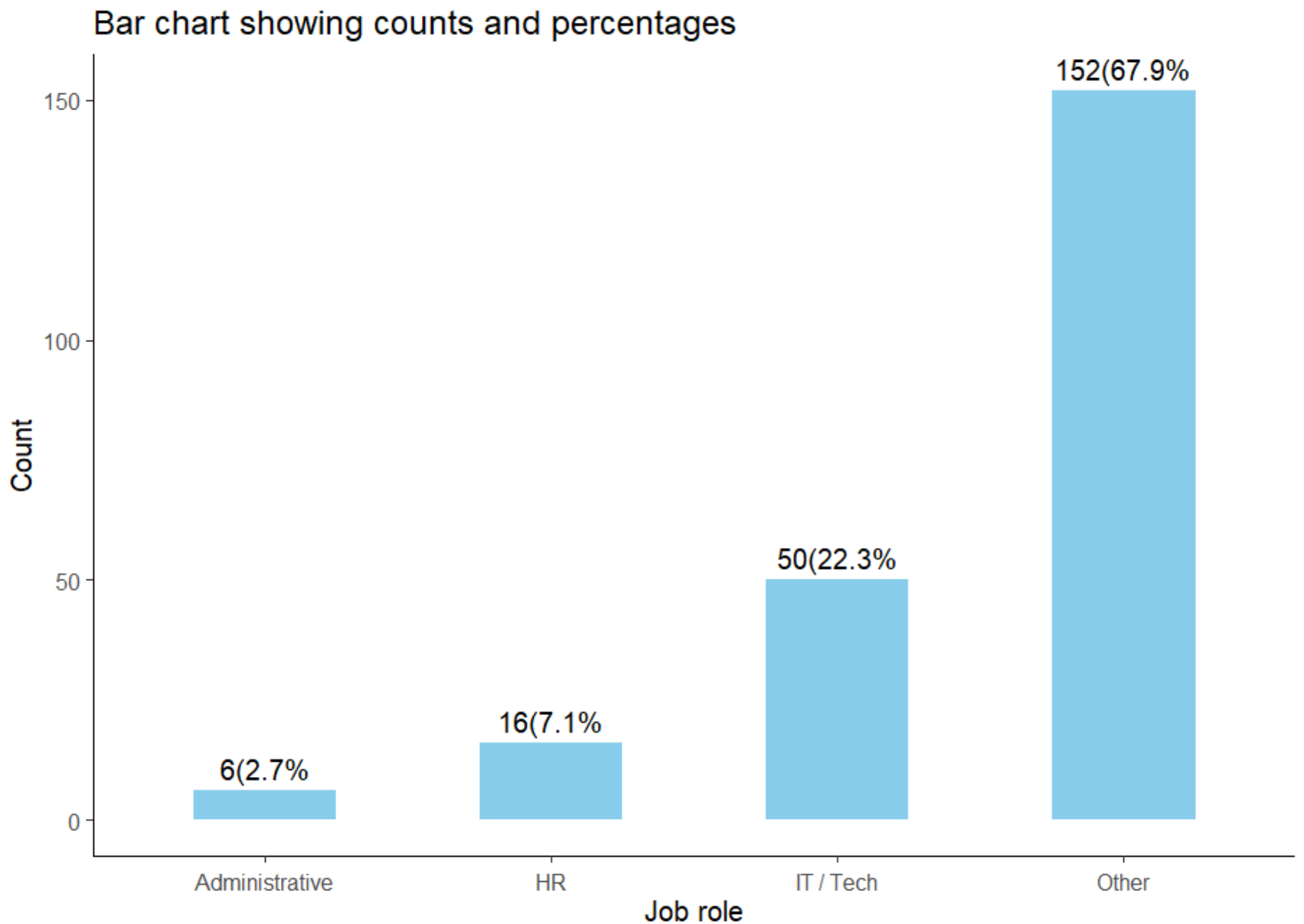
Education level



Working Experience



Job Role

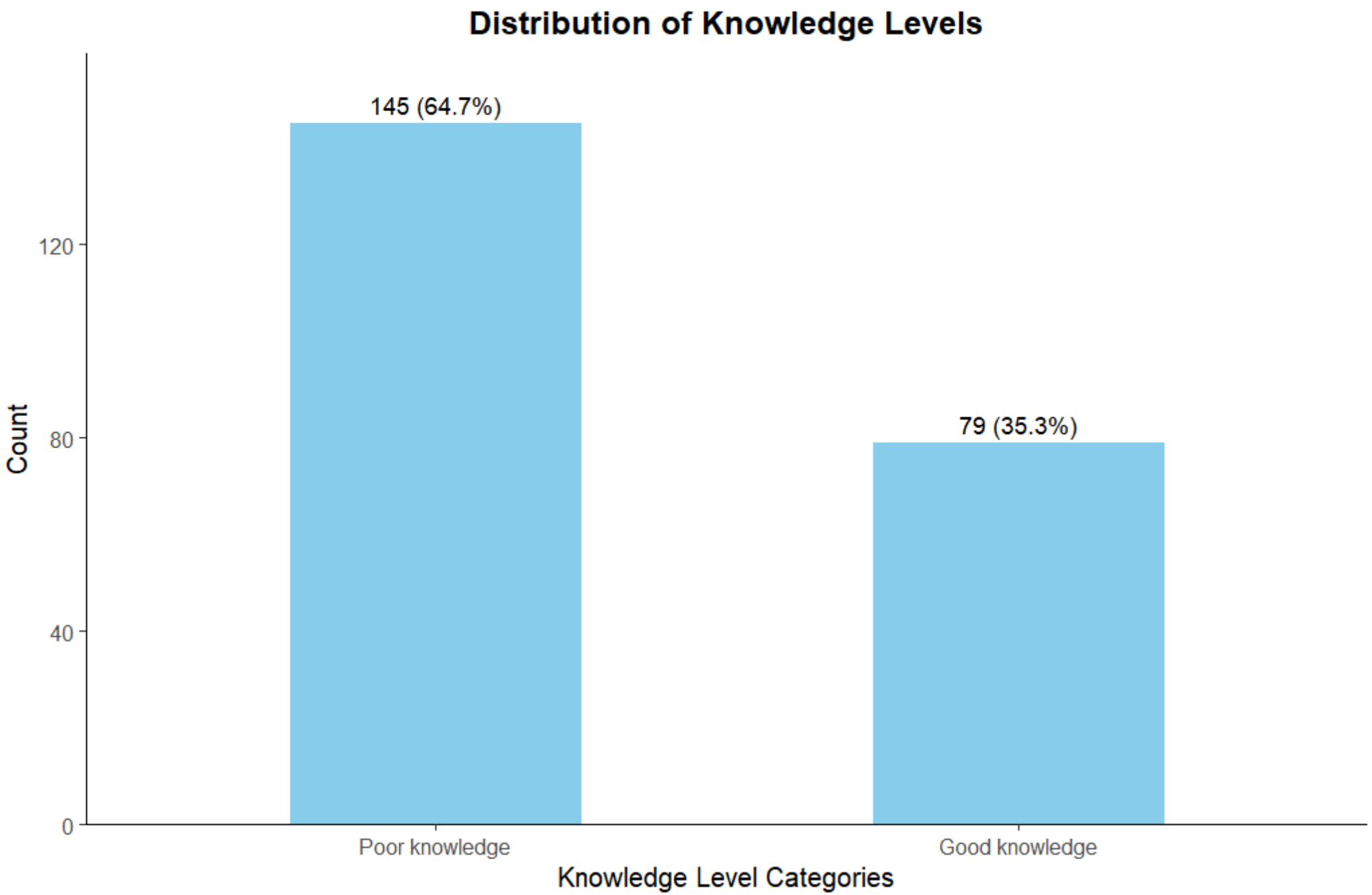

Bar chart showing counts and percentages
Count
150
100
50
0
6(2.7%
16(7.1%
50(22.3%
152(67.9%
Administrative
HR
IT / Tech
Other
Job role

Statistical Analysis

Objective 1

- To describe the common practices among computer-based office workers in preventing screen time-induced eye disorders among computer office workers.

Variables	Knowledge score
Poor knowledge	<= 2.5
Good knowledge	> 2.5

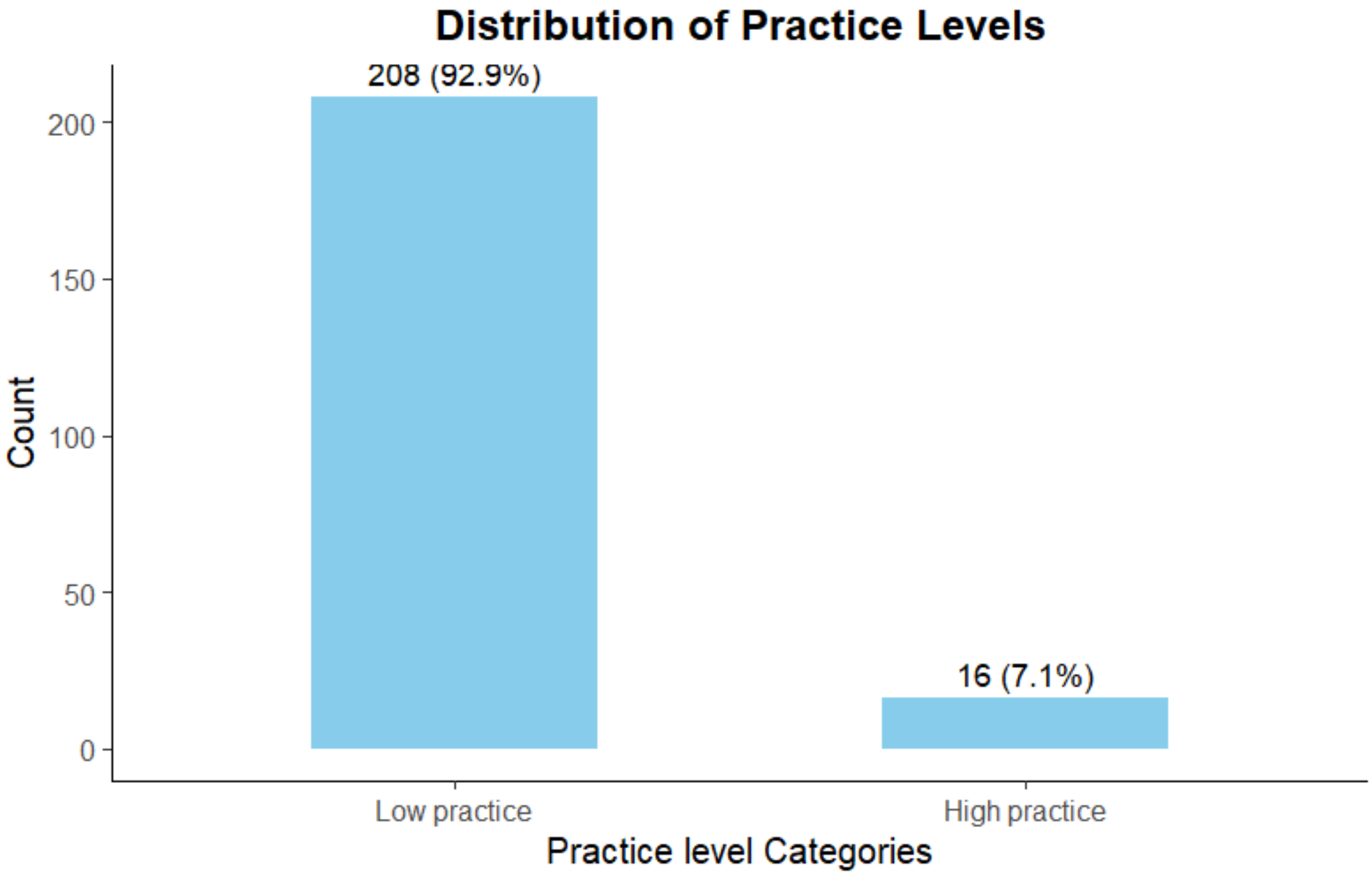

Distribution of Knowledge Levels
145 (64.7%)
79 (35.3%)
Count
0
40
80
120
Poor knowledge
Good knowledge
Knowledge Level Categories

Objective 2

- To describe the common practices among computer-based office workers in preventing screen time-induced eye disorders among computer office workers.

The total practice score, ranging from 0 to 8, was computed by assigning weighted marks based on participants' responses to eight preventive behaviors related to screen use. Based on this score, a categorical variable named **`practice_level`** was created

Variables	Practice score
Low practice	<= 4
High practice	>4


Distribution of Practice Levels
208 (92.9%)
16 (7.1%)
200
150
100
50
0
Count
Low practice
High practice
Practice level Categories

Objective 3

- To describe the association between the level of knowledge & preventive practices among computer based office workers in preventing screen time-induced eye disorders among computer office workers.

To assess the association between knowledge level and preventive practices regarding screen time-induced eye disorders among computer-based office workers, a **chi-square test of independence** was conducted.

Contingency table of knowledge and practice score variables

	High practice	Low practice
Poor knowledge	7	138
Good knowledge	9	70

Association between knowledge and practice variables

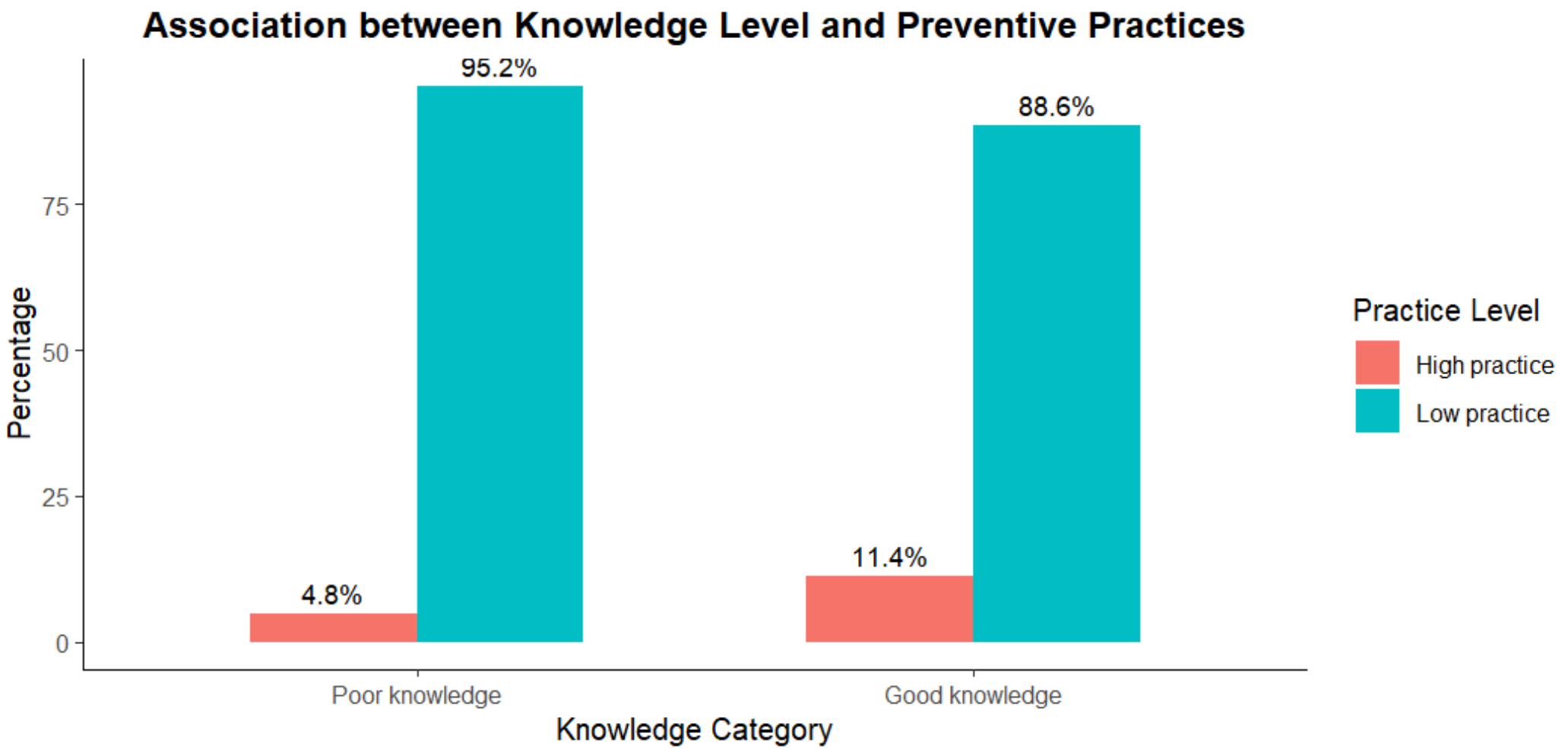
H0 : There is no any association between two variables.

H1 : There is an association between two variables.

Since p-value is 0.1208 > 0.05 we have not enough evidence to reject H0 at 5% of significance.

So we can conclude that there is **no any association between the level of knowledge & preventive practices among computer based office workers** at 95% confidence.

Visualizing the association



Thank You !