

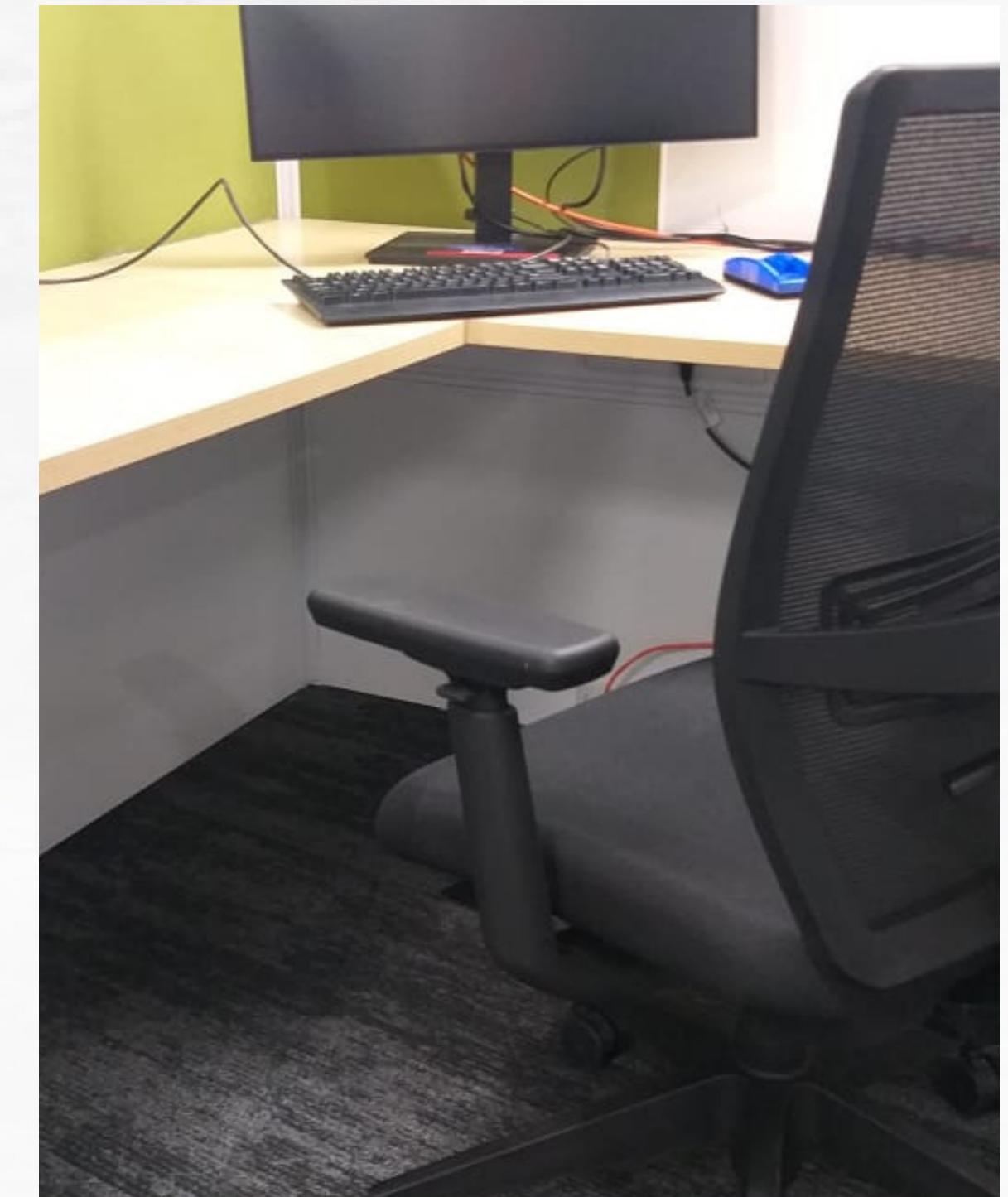
# Revolutionizing Office Comfort

Group - 6

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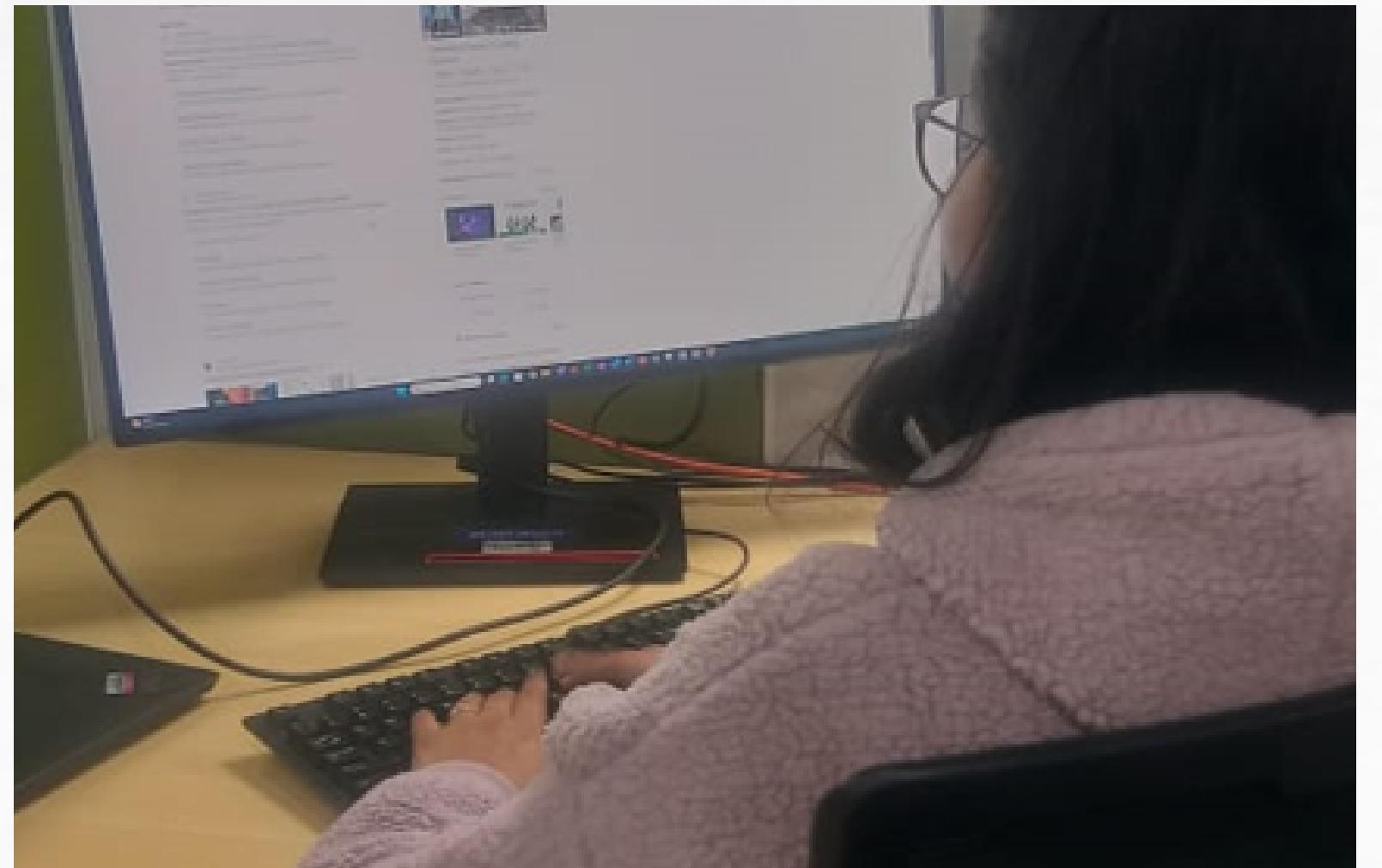
# Habitat1

HFCL office, Gurugram



# Habitat2

Qualcomm, Noida



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# Habitat3

## Supreme sales, Bhilwara



## Target-users of our product

We have following user as our target audience:

=> "People working in offices or shop"

# Habitat Study

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## Habitat-1 : Office 1

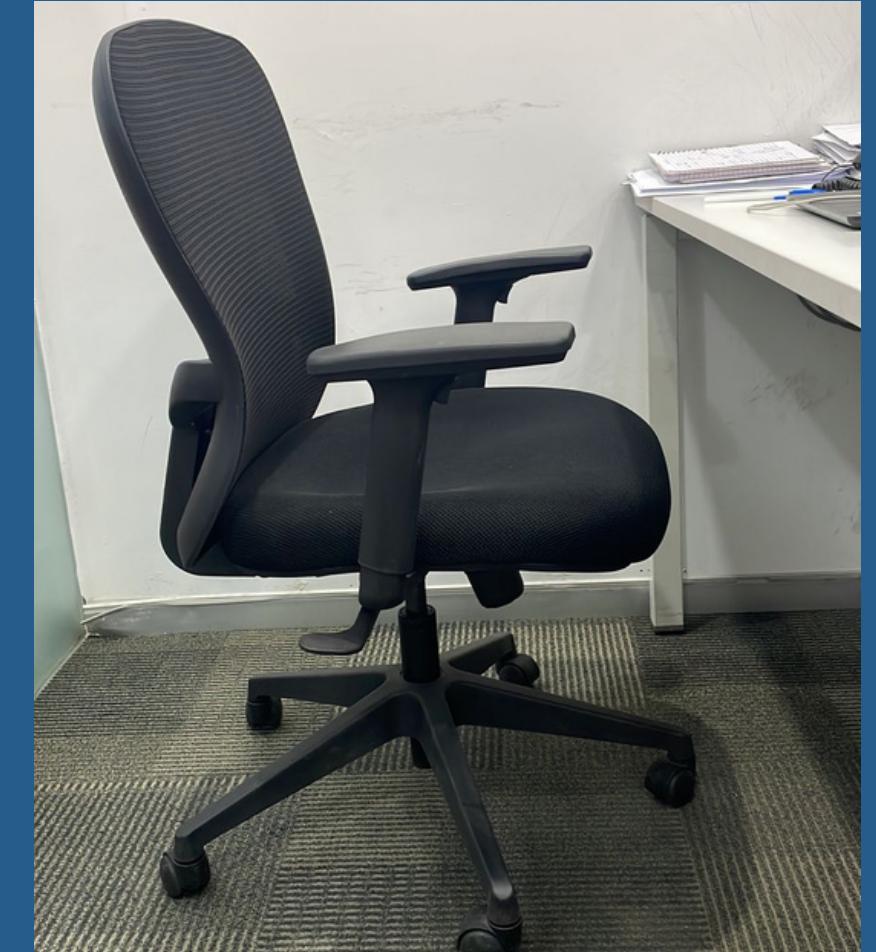


The person is bending forward which creates back pain

When seat is placed inside the empty space, there is no area left for easy movement

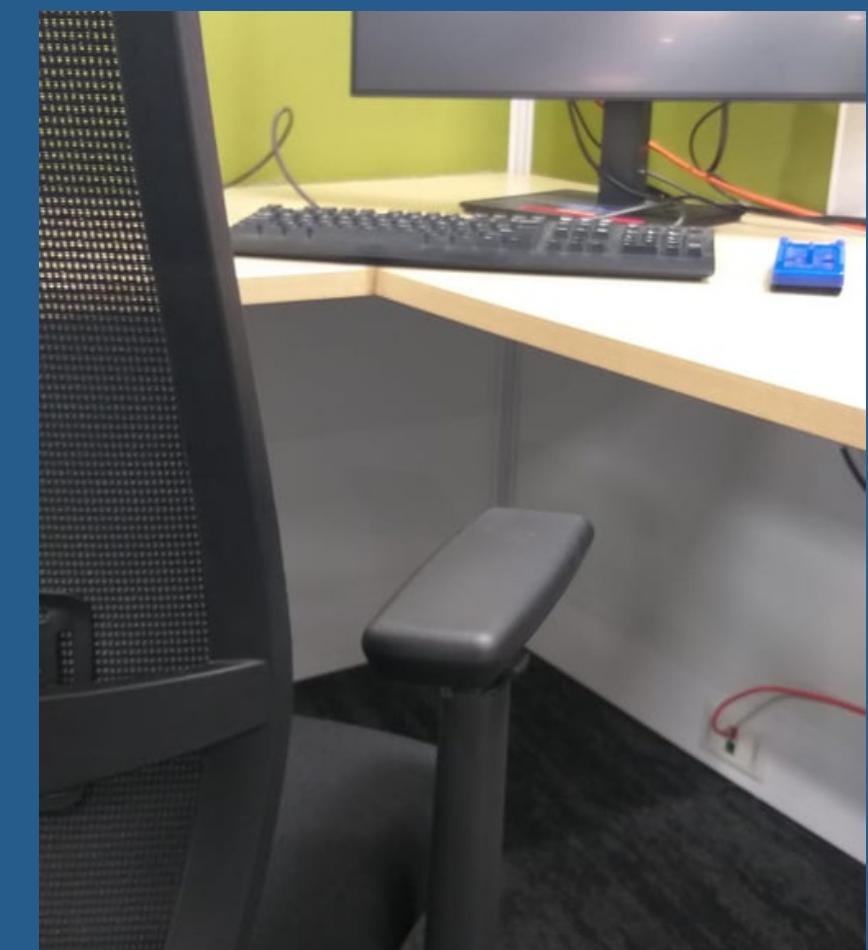
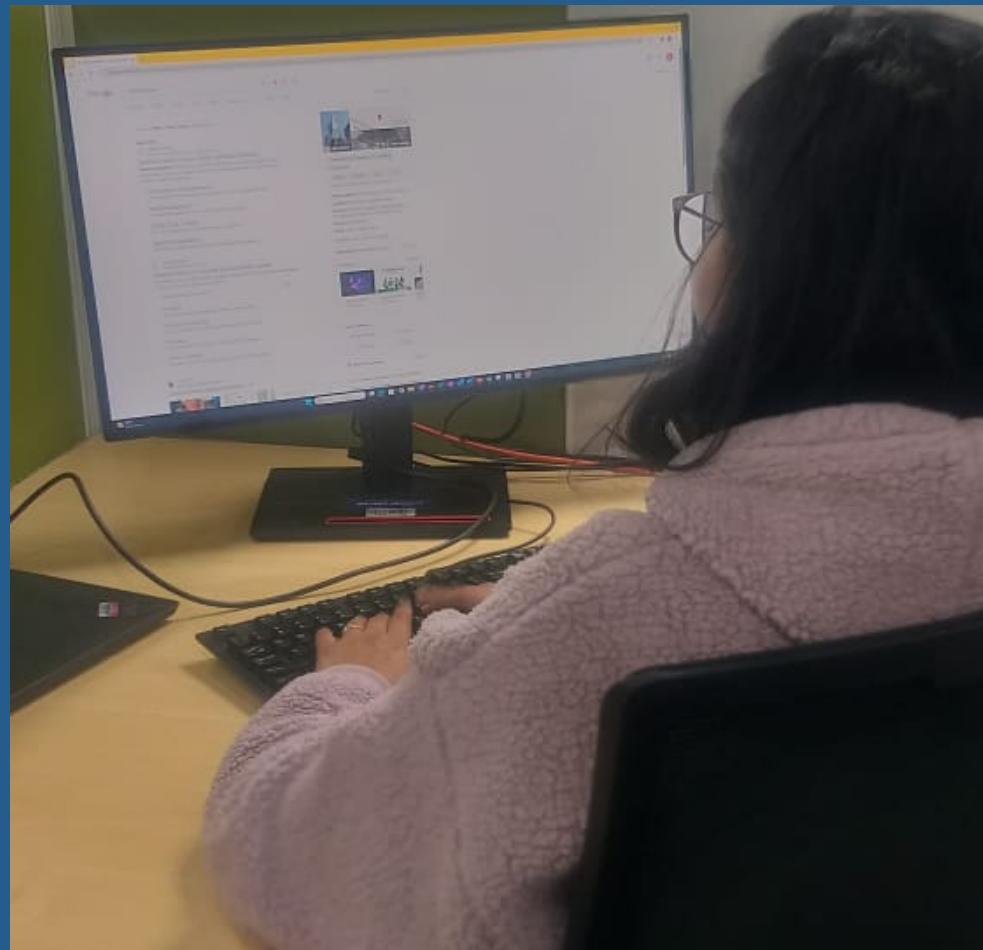


The backseat is bent at an uncomfortable position with no valve to adjust inclination



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# Habitat-2 : Office 2



# Habitat-3 : Shop



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# Habitat Problems

**01.**

## Noise & Acoustics

Overlapping noise is contributing to stress and reduced concentration.

**02.**

## Chair & Desk Ergonomics

Uncomfortable chairs and poorly designed desks are present creating strain and musculoskeletal issues

**03.**

## Lighting Issues

Inadequate and harsh lighting in some areas causing eye strain

**04.**

## Temperature & Ventilations

Uncomfortable temperatures and poor ventilation affecting productivity and well-being.

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# Habitat Problems

05.

## Computer Monitor Placement

Incorrect monitor height and placement resulting in neck strain and eye discomfort

06.

## Keyboard and Mouse Placement

Awkward placement of keyboards and mice lead to wrist strain and discomfort

07.

## Breakout Areas and Relaxation Spaces

Lack of spaces for breaks and relaxation contribute to stress and burnout due to long working hours.

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# Observations



Noise issues - Due to people in close proximity ,it creates disturbance for others



Monitor placement-  
Monitor higher than neck height



Less spacious-  
Space between adjacent chairs is less

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## Critical Problem(Product) and why we have chosen this?

“Ergonomically poor designed chairs leading to incorrect postures”

- 1) A person working in office on average spends 6 to 7 hours per day working on chair. Hence, the *orientation of chair* creates a big impact on posture of user.
- 2) As per research studies conducted in 2010, a person makes *53 changes* in position of his/her torso while sitting on chair.
- 3) Poor posture for a long time reduces the *Quality of work* drastically hence needs to be addressed.

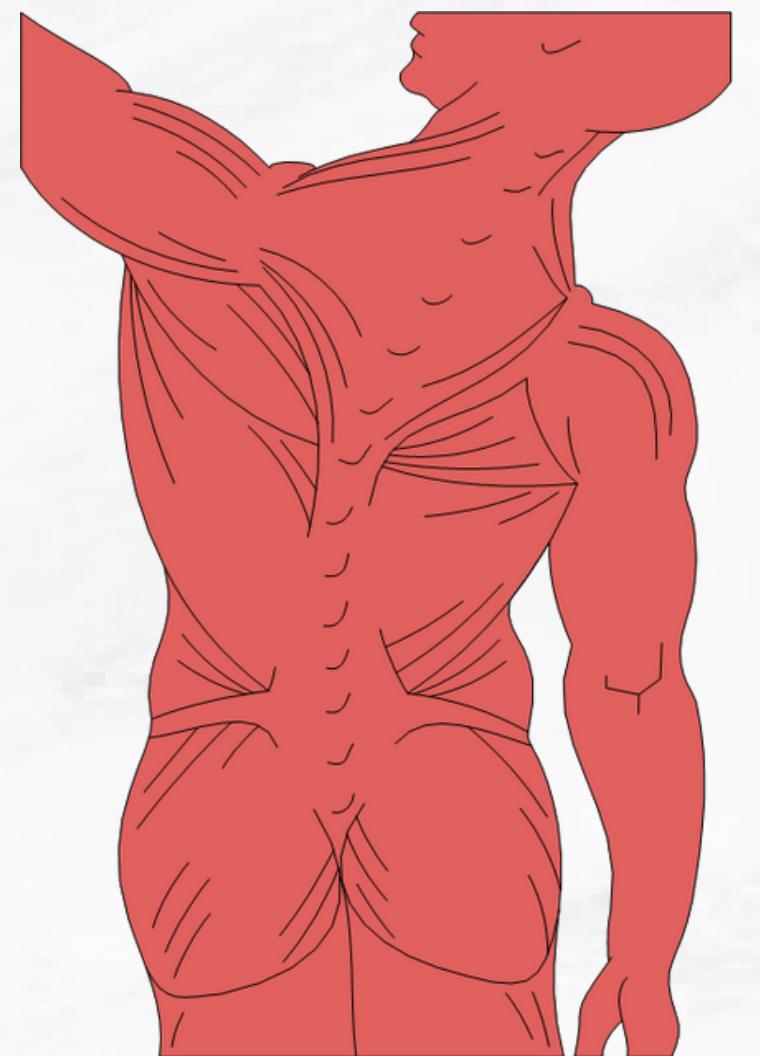
# Problems faced due to poorly designed chairs

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Possible problems...

- Vision Problems
- Migraines
- Work Related Stress
- Spondylitis
- Osteoporosis
- Frozen Shoulder
- Carpal Tunnel Syndrome
- Tendonitis
- Tenosynovitis
- Fibromyalgia
- Rheumatoid Arthritis
- Pregnancy
- Multiple Sclerosis
- Scoliosis
- Postural Pain
- Myalgic Encephalopathy
- Obesity
- Prolapsed Discs
- Lumbar Pain
- Ankylosing Spondylitis
- Sciatica
- Osteoarthritis
- Nerve Entrapment

## Musculoskeletal disorders



## Increased stress, decreased circulation

Uncomfortable seating can negatively affect employee satisfaction and retention.



*Typical desk top typing posture  
that increases muscle fatigue  
and injury risks.*

# Problems Faced due to poorly designed chairs

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## Reduced Blood circulation

Improper chair design hinders blood circulation, leading to numbness and tingling in the legs.

## Increased stress & low interests

Uncomfortable seating can negatively affect employee satisfaction and retention

## Poor productivity

Sitting in poor posture drains a lot of energy out of body as a result leads to low quality of work

## Long term back pain

Insufficient lumbar support can contribute to lower back pain and discomfort.

# Problems & Drawbacks of sitting chairs in offices

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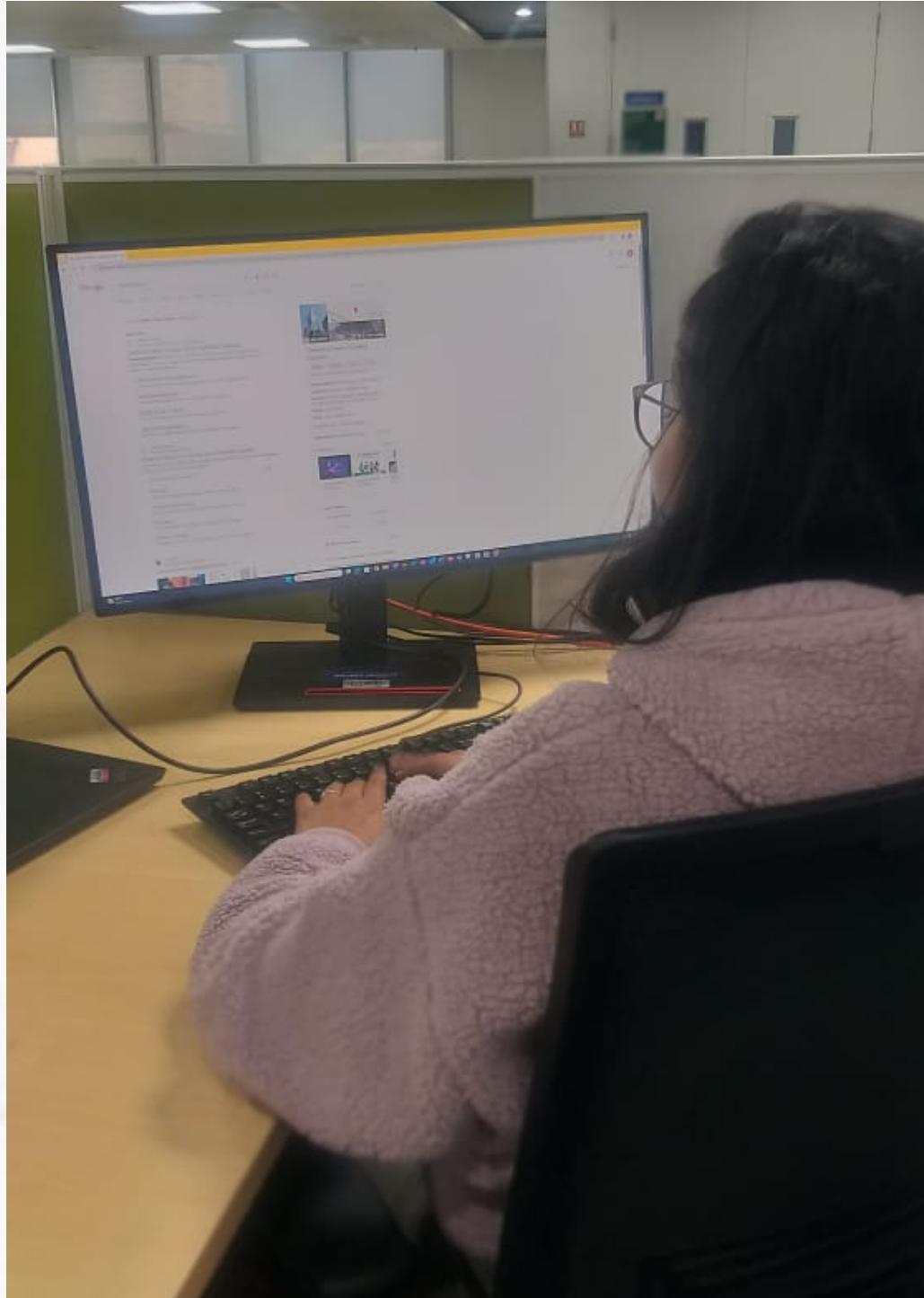


*Shop in Bhilwara*

This is the habitat(office) of my father. The new chair brought by is ergonomically poor designed as it holds a huge inclination(*between lower seat and backseat*) which should be *ideally\_95-105 degrees*. The high angle creates restlessness when this chair is used for long duration.

# Problems & Drawbacks of sitting chairs in offices

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My sister, Sanjana has complained several times for neck pain. The underlying poor design of chair creates this issue. The chair is designed such that the backbone does not get completely aligned with chair's back, the space left in-between creates discomfort.

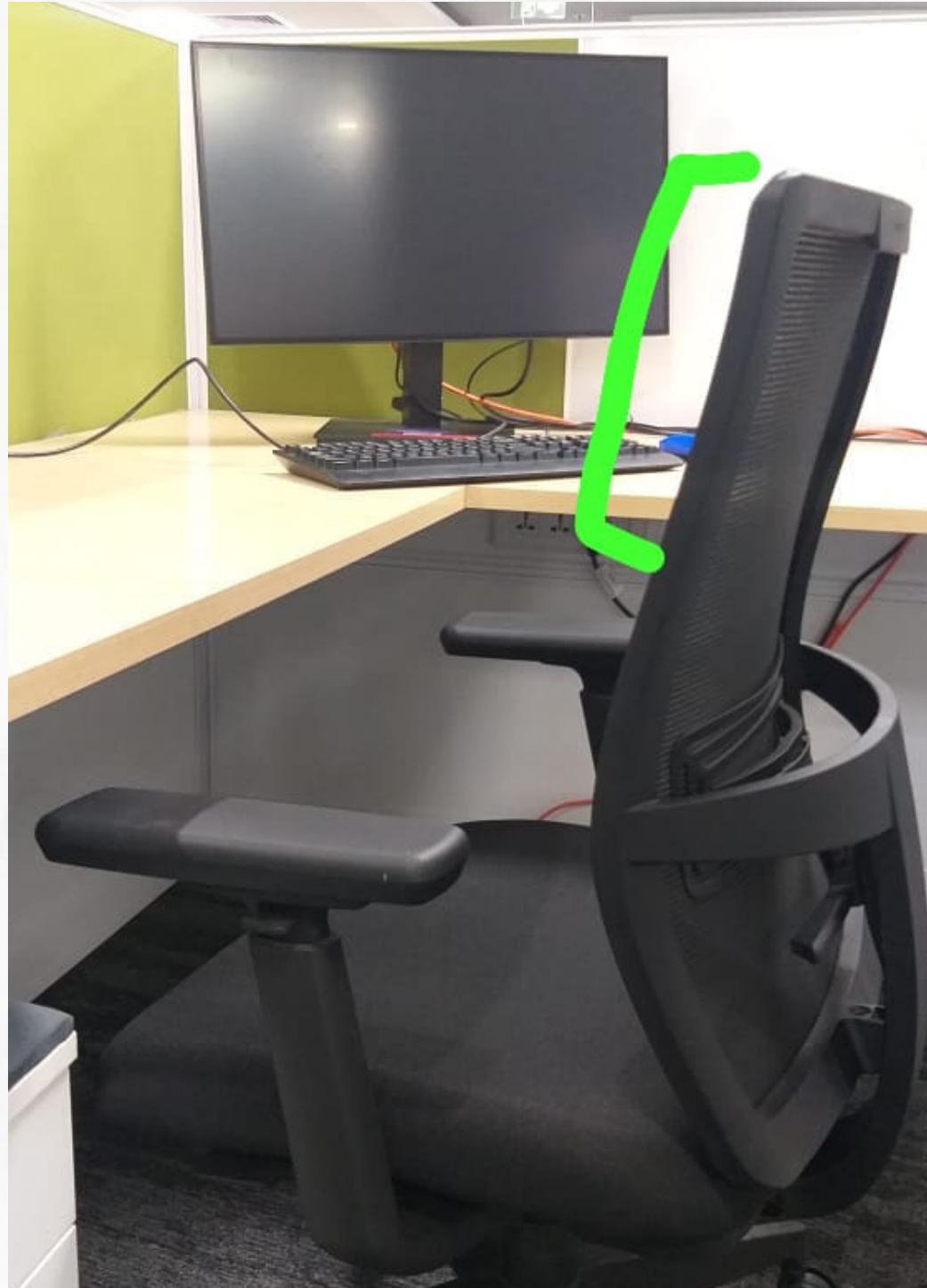
# Problems & Drawbacks of sitting chairs[Design flaws in chair]

1. Lack of Lumbar Support for lower back
2. *Non-Adjustable Armrests*
3. Inadequate Seat Depth
4. Uncomfortable Seat Material
5. Limited height of chair and tiltability of backseat
6. Unstable Base - due to more sensitive wheels, chair kept moving
7. *Poor Quality lower seat cushioning.*

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# Observation 1 [Ergonomic flaws in chair]

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Flaw1:The design of this chair from Habitat-2 is ergonomically poor as the back area which supports the spine lacks Cushion and hence user will suffer from back-pain and uneasiness when he/she will sit at this chair for longer periods of time.

## Observation 2 [Ergonomic flaws in chair]



**Flaw 1:** In the part of chair which supports our backbone, there is a *constriction(inwards)* which creates a gap issue and provide discomfort to our backbone.

**Flaw 2:** Both the armrests have a curvy shape instead of a flat one which relaxes our arm but causes strain on our limbs.

# Roleplay as a user of the product

(Ashwani Gupta , Manager at HFCL)

I come to the office each morning, settling into my chair and the absence of proper lumbar support becomes apparent. So I bring my own lumbar cushion to lessen the discomfort that tends to creep up on my lower back. Working on the laptop poses its challenges too as the screen isn't at eye level, leading to persistent neck strain. To counter act this, I've installed a laptop stand. As the day unfolds, the battle against stiffness sets in, urging me to take breaks and stretch. I've even set up a timer to remind myself to stand and move every hour, but the workload often keeps me tethered to the chair. Regular Meetings, only add to the strain. I've started suggesting standing or walking meetings when feasible, but it's not always well-received. My chair is not very comfortable and there is no head support. If I could change one thing about the office, it would be a holistic investment in ergonomic chairs, adjustable desks, and a workspace that encourages movement and flexibility. Such changes would not only enhance my own comfort but contribute to a healthier and more productive work environment for all.

# Roleplay as a product

## (Chair at HFCL)



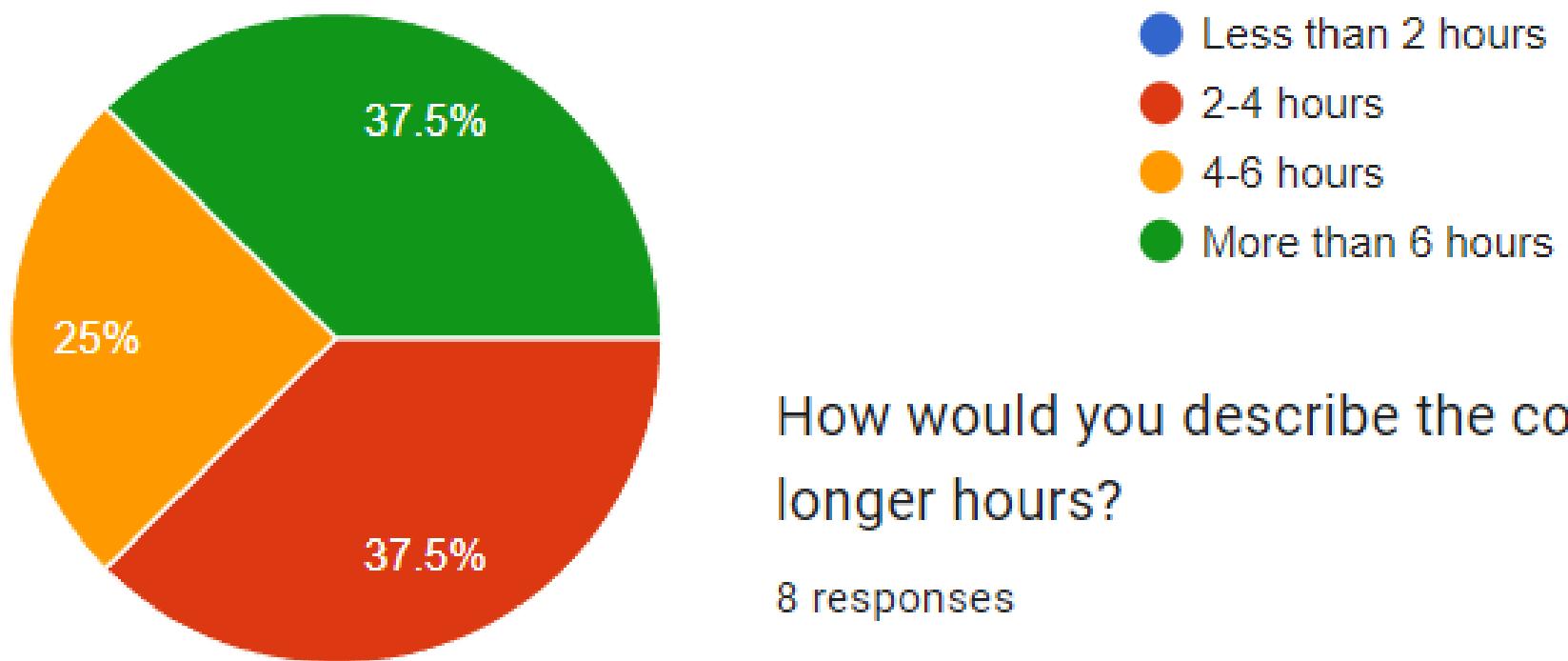
I am an old black chair who stands quietly at a corner of the HFCL office observing the daily activities around me. I had seen better days but now i have worn-out cushion and lack of ergonomic features making me less inviting and attractive to the employees than my counterparts . i envy the chairs at senior Managers' and President's office which have softer cushions and adjustable head supports. Junior employees rarely chose me, as they get tired early while sitting on me.

Wish i could get a makeover – a bit more padding, a headrest, and some ergonomic improvements , i want my backseat be able to tilt to give more comfort to my users. I want to be noticed and positioned in a way that would make me a comfortable and welcoming option. I dream of a transformation, from a forgotten piece in the shadows to a symbol of workplace well-being.

# Interacting with users through Questionnaire

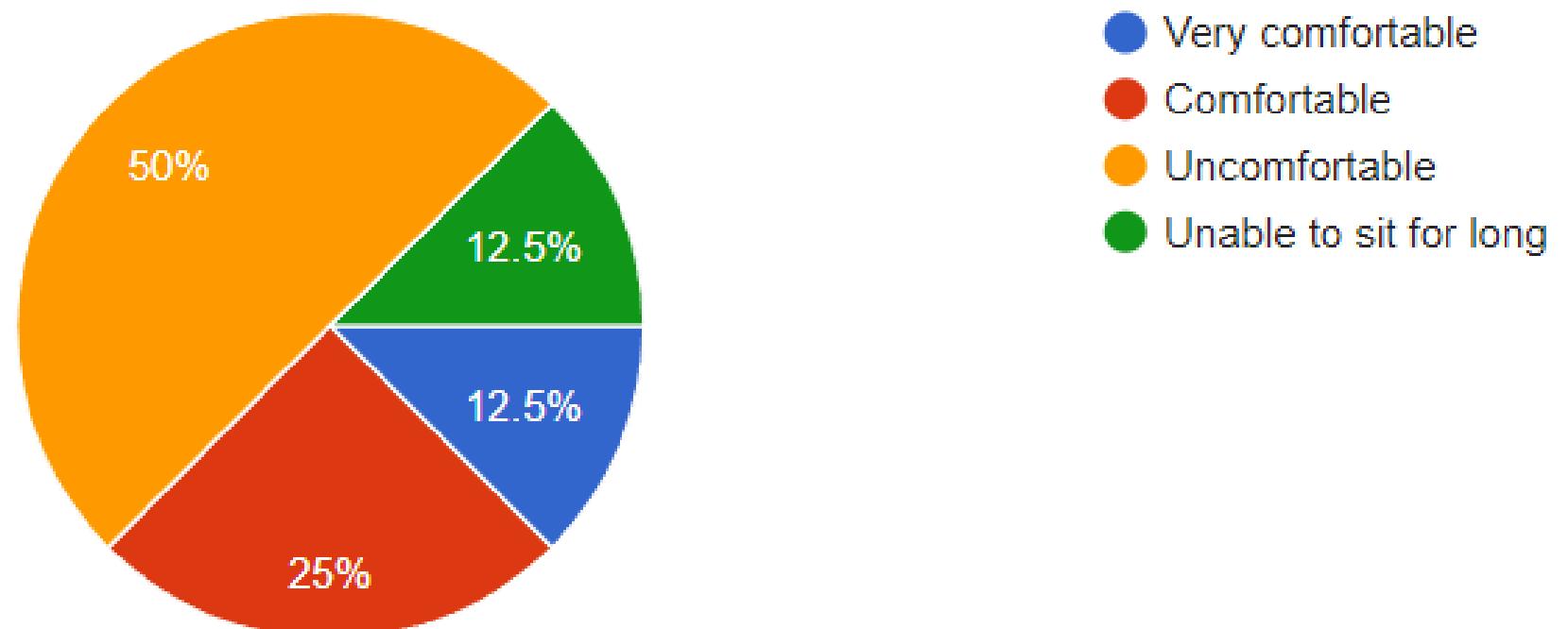
How many hours, on average, do you spend sitting on a chair each day in your office?

8 responses



How would you describe the comfort of your current chair when you sit at a stretch for longer hours?

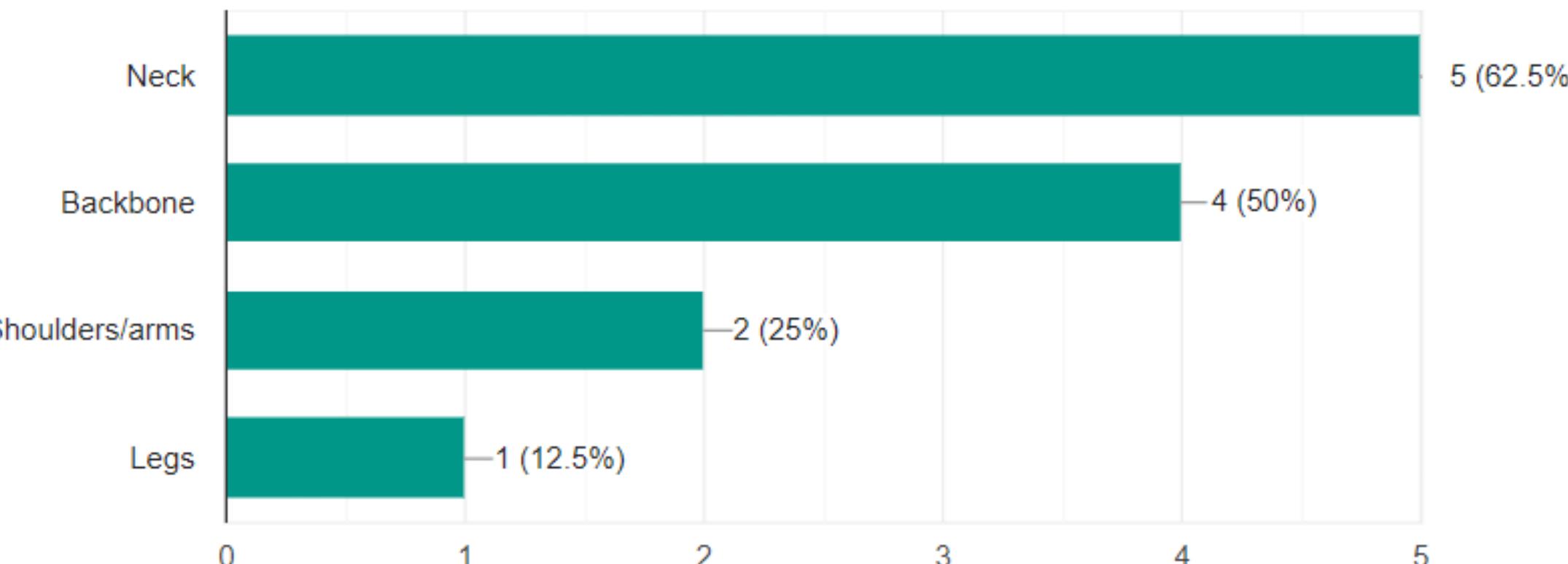
8 responses



In which part of your body do you experience pain or discomfort most frequently while sitting?

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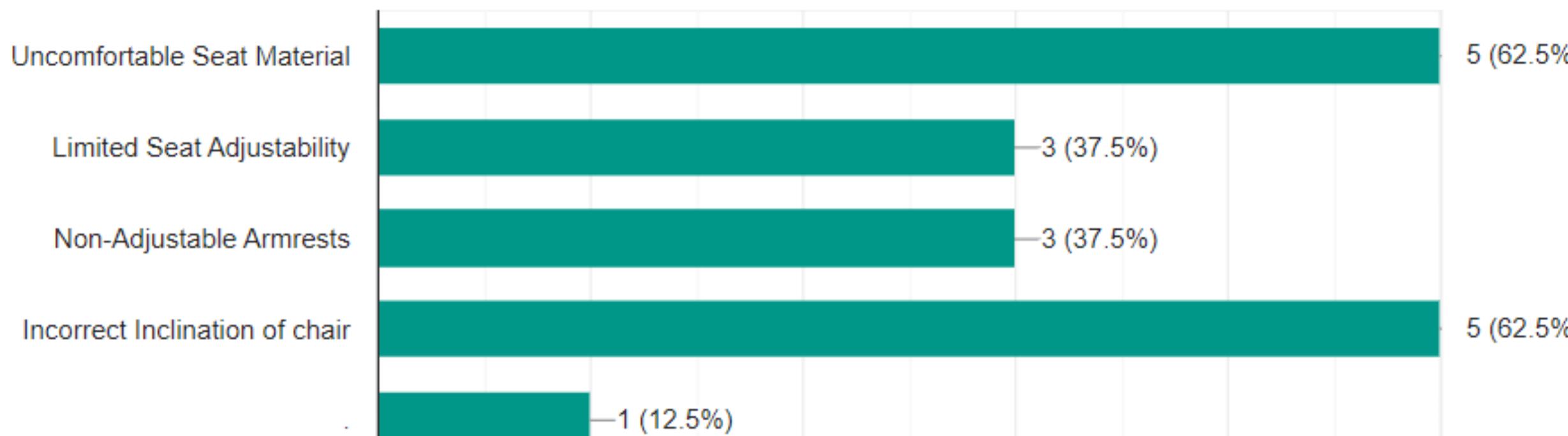
8 responses



Which part of the chair do you expect it to be most responsible for pain or discomfort most frequently while sitting?

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8 responses

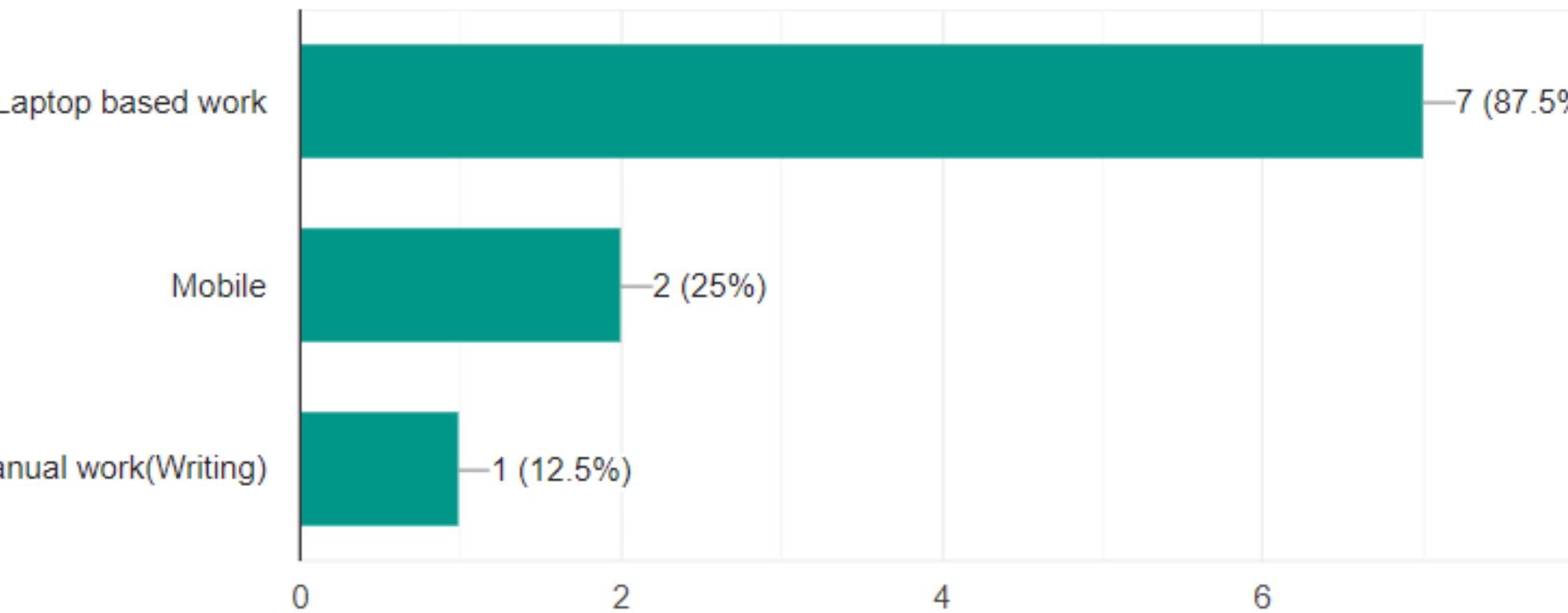


What type of work-related activities do you typically engage in while sitting on your chair?

Copy

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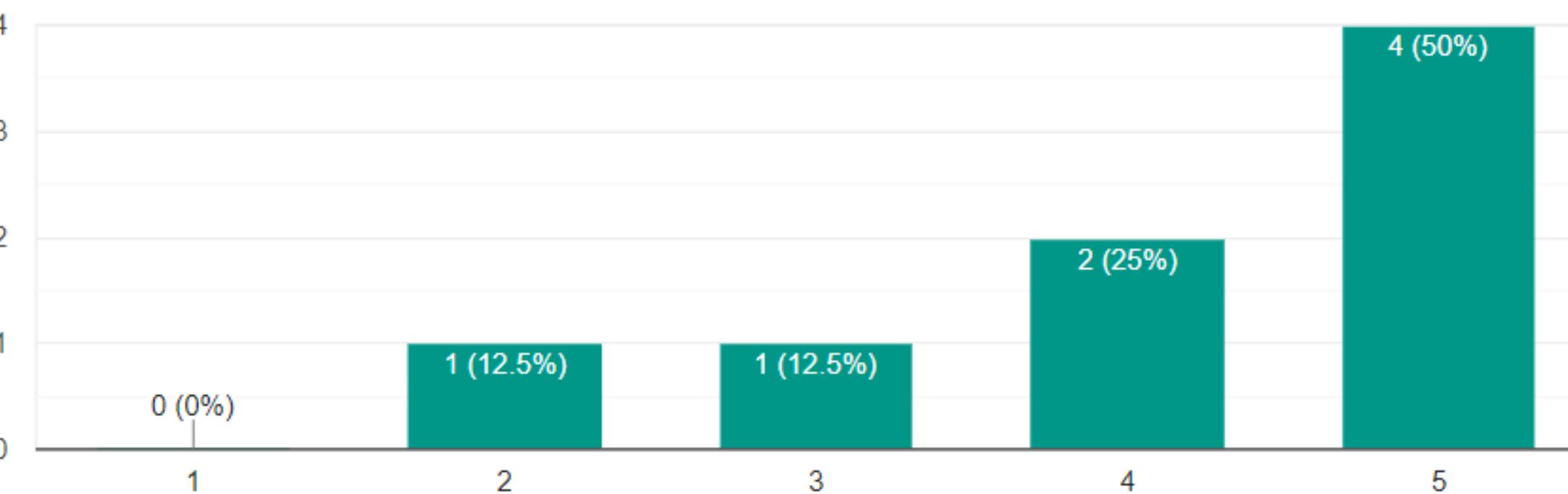
8 responses



How likely are you to seek ergonomic solutions or a better chair based on your current experience?

Copy

8 responses





Interview-1

A screenshot of a Zoom meeting interface titled "Zoom Meeting 40-Minutes". The interface shows two participants: "Sanjana" on the left and "Aditya Jain" on the right. Both participants are wearing glasses and hoodies. The Zoom control bar at the bottom includes buttons for Mute, Stop Video, Security, Participants (showing 2), Chat, Share Screen, Record, Reactions, Apps, Whiteboards, Notes, and End.

Interview-2



Interview-3

## **Ques. & responses of interview and Focus group study**



**Q1: How many hours, on average, do you spend sitting on your office chair during a typical workday?**

Response 1 : "I spend around 4 hours a day in my office chair during work hours"

Response 2 : "On an average workday, I spend approximately 7 hours sitting in my office chair."

Response 3 : "I practically live in my office chair, easily spending 10 hours a day working in it."

**Q 2: Are you satisfied with the comfort and design of your current office chair?**

Response 1 : "Its allright but the chair lacks proper lumbar support, and the cushioning is quite minimal. It gets uncomfortable after a few hours."

Resp 2 : "I would rate my satisfaction with my current office chair as moderate. It could be more comfortable."

Resp 3 : "Honestly, no. The chair is outdated and uncomfortable. The lack of proper lumbar support and cushioning makes it challenging to focus."

**Q3: Can you share your experience regarding any discomfort, pain, or exhaustion you may feel in your neck, back, fingers, legs, or arms while sitting?**

Resp1 : "I often experience lower back pain after prolonged sitting. Occasionally, my neck feels strained, especially when working on the computer for extended periods."

Resp 2 : "I often experience discomfort in my lower back as well neck after prolonged sitting. ."

Resp 3 : "Discomfort is an understatement. I often experience back pain, and my fingers get sore from prolonged typing. It's affecting my productivity."

#### **Q4: How would you describe the overall ergonomic experience of your chair? Are there specific design features that you find problematic?**

Response 1 : "The overall ergonomic experience is subpar. The chair lacks adjustability, and the fixed armrests are too low.  
It doesn't support a natural posture."

Response 2 : "The overall ergonomic experience is not so good, but I find that the lack of lumbar support, non-adjustable design, low-quality fabric are notable issues"

Response 3 : "The chair is a nightmare ergonomically. It's fixed in an awkward position, and the armrests are too high. I can't find a comfortable sitting posture."

#### **Q5: Do you ever feel exhausted or fatigued after a long period of sitting in your chair?**

Resp 1 : "Yes, by the end of the day, I feel exhausted. I make sure to take regular breaks in between ."

Resp 2: Yes, after extended periods of sitting, I often feel some fatigue, especially in my legs and arms."

Resp 3 : "Absolutely. I feel exhausted, physically and mentally. It's like my chair is actively working against me."

#### **Q6. If you could change or improve some aspects of your office chair's design, what would it be?**

Resp1 : "I would improve the lumbar support and make the chair more adjustable. A headrest would be great for better neck support and the seat could have a tighter cushion"

Resp 2 : "I think there is lack of lumbar support, non-adjustable design, low-quality fabric are notable issues.

Resp 3 : "If I could change something, it would be everything. Adjustable features, proper lumbar support, and a more modern design would be a game-changer."

# Interviews Drive Link :

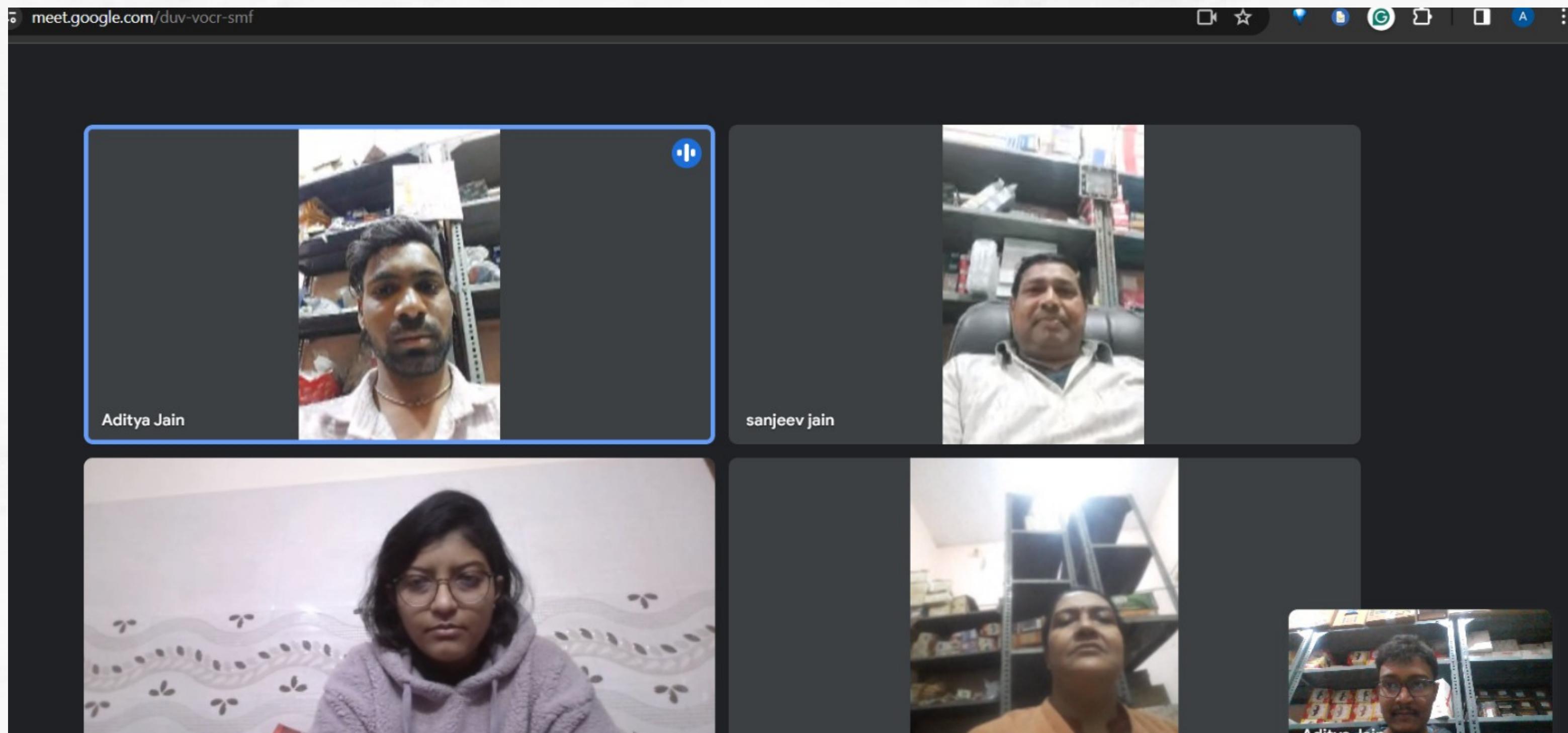
**Interview-1 recording link:**

[https://drive.google.com/file/d/1lu\\_MX-a69xD3pGEyE7xEUkECntqR8XwC/view?  
usp=drive\\_link](https://drive.google.com/file/d/1lu_MX-a69xD3pGEyE7xEUkECntqR8XwC/view?usp=drive_link)

**Interview-2 recording link:**

[https://drive.google.com/file/d/17OIxGBGXzL9odIsHYLFrF\\_mqB1\\_W-8Us/view?  
usp=drive\\_link](https://drive.google.com/file/d/17OIxGBGXzL9odIsHYLFrF_mqB1_W-8Us/view?usp=drive_link)

# Focus Group Study conducted on 4 users



## **Analysis of Focus Group Study**

### **Average Sitting Duration**

- Participants reported spending an average of 7 hours sitting in their office chairs during a typical workday.

### **Ergonomic Concerns Raised**

- Concerns about the overall ergonomic experience were raised, including issues like the lack of lumbar support, non-adjustable design, and low-quality fabric.

### **Contributors to discomfort**

- Issues like the lack of lumbar support, non-adjustable design, and low-quality fabric contributed to discomfort.

### **Fatigue in Legs and Arms**

- Fatigue, especially in the legs and arms, was reported as a recurring issue after extended periods of sitting.

### **Variable Satisfaction Ratings**

- Overall satisfaction ratings varied, with one participant rating their experience at a 6/10, acknowledging functionality but recognizing room for improvement in terms of comfort and design.

# Compiling all the problems from user play, Interview, Questionnaire and Focus group study

## =>Pain points(problems) from Role-play of user

### (1) Lack of Lumbar Support:

The absence of proper lumbar support in the office chair leads to persistent discomfort in the lower back, prompting the need for an additional lumbar cushion.

### (2) Neck Strain from Screen Position:

Working on the laptop becomes challenging as the screen isn't at eye level, resulting in neck strain.

### (3) Stiffness in legs and lower back

### (4) Call for standing Meetings

Regular meetings add to the strain, with the user proposing standing or walking meetings as an alternative. However, the suggestion is not always well-received.

## =>Pain points(problems) from Role-play of product

### **1) Lack of Ergonomic Features**

The chair expresses dissatisfaction with its current state, absence of ergonomic features of too soft seats, inadjustability , making it less appealing and attractive compared to other chairs in the office.

### **2) Envy of Chairs in Senior Management Offices**

The chair envies its counterparts in senior managers' and the president's offices, which boast softer cushions and adjustable head supports, highlighting the discrepancy in comfort and features.

### **3) Limited Attraction to Junior Employees**

Junior employees tend to avoid choosing the chair due to its worn-out condition and perceived lack of comfort. The chair acknowledges that users tire quickly when seated on it.

## Compiling problems from Interview & Focus group study

### 1) Lack of Lumbar Support

Without adequate lumbar support, users were experiencing lower back discomfort.

### 2) Limited Range of Motion of Arms due to improper position of the armrests

Users found challenging to reach out to keyboard while placing their arms on the armrest.

### 3) Inadequate Seat Depth

Users found it challenging to maintain proper posture as the seat depth doesn't support the entire length of their thighs.

Thank You !!