

DEJÀ VU

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What exactly is déjà vu?

"Déjà Vu" describes the uncanny sensation that you've already experienced something, even when you know you never have. The expression is derived from the French, meaning "already seen."

It's often nothing to worry about. Although déjà vu can accompany seizures in people with **temporal lobe epilepsy**, it also occurs in people without any health issues. There's no conclusive evidence on how common it actually is, but varying estimates suggest anywhere between **60 and 80 per cent** of the population experience this phenomenon. While déjà vu is fairly common, especially among young adults, experts haven't identified a single cause.



Some researchers describe it as a 'glitch' in the brain allowing the brain to mistake the present for the past. In fact, the same abnormal electrical impulses that contribute to epilepsy in healthy people.

Possible Causes/Theories

- **Divided perception:** Perhaps our brains process a situation in a quick and shallow manner before becoming fully aware of it and then we get a sudden jolt of having seen it before.
- **Dual processing:** Incoming signals, including the scene's smell/visuals/sounds, enter the temporal lobe (the lobe responsible for memory) from both hemispheres of the brain. A time delay between the processing in these two areas may register different aspects of the scene as separate events, and when the later memory plays over the earlier one, it seems like the earlier event has happened before.
- **Hologram theory:** A familiar visual aspect is connected to an old memory, without the surrounding details, so you're stuck in the current event with a feeling of familiarity but no facts in your brain to back that up. This is called the hologram theory because like in holograms, only one fragment gives us the entire picture (supposedly).



Other Types of Déjà Experiences



Heard before



Thought before



Wanted before



Eaten before



Read before



Met before

ETC.

Caused by which part of the brain?

TEMPORAL LOBE

Memory is stored in a part of your brain called the temporal lobe. Long-term memories, events, and facts are all pushed right to that area of the brain. Specific parts of the temporal lobe also play a role in recognizing something as familiar. And while it's not completely proven that *déjà vu* is connected to

the temporal lobe there have been some clues that lead scientists to make this connection.

Stress and fatigue can also cloud short and long-term memory. If your memory is impacted, this happens in the temporal lobe, which might lead to a feeling of *déjà vu*.

WHEN CAN IT GET SERIOUS?

SEIZURES

Déjà vu is sometimes a sign of a seizure, specifically an epileptic seizure. About 60 percent of people with epilepsy have something called a focal seizure, which is in just one part of the brain and these can be hard to recognize as seizures because they are short and you remain conscious throughout. A person having one may look like they are having a staring spell or daydreaming.

SIDE-EFFECTS

- Motor feelings, which impact your ability to control your muscles.
- Sensory feelings, involving taste, touch, smell, vision, and hearing.
- Sudden and unexplainable feelings of joy, anger, sadness, or nausea.
- Strange, repetitive behaviors, such as blinking, twitching, or moving your mouth involuntarily.

Déjà vu and Premonitions

Experiments uncovered a strong predictive bias in people having déjà vu – that they feel like they know what's going to happen next. However, in the lab, people who were having déjà vu were not able to actually predict what was going to happen next. That predictive feeling, however intense, was just a feeling. It can occur when **someone encounters a scenario similar to an actual memory but fails to recall the memory.**

A research team concluded that if the entire scene feels intensely familiar as it unfolds, that might trick our brains into thinking we got it right after all. Because it felt so familiar as you were going through it, it felt like you knew all along how it was going to go, even if that could not have been the case.



Déjà Vu Experiments

Scientists have established that déjà vu is tied in with memories as well, but familiarity is a key trigger.

A research team built environments in the computer game: The Sims – layouts that were spatially the same, but thematically different: for example, a garden and a junkyard.

At a critical point, the participants were stopped and asked if they were experiencing déjà vu and if they knew what the next turn should be. Around half of the participants reported feeling a sense of premonition alongside déjà vu – but they were no more likely to hit on the correct answer than participants who chose randomly.

Hence, duplication has proven to induce déjà vu feelings!



METAMEMORY PHENOMENON

Both tip of the tongue (that sensation when a word is just out of reach of recall) and déjà vu are examples of what researchers call "metamemory" phenomena. They reflect a degree of subjective awareness of our own memories. Another example is the memory process known as familiarity, like when you see a familiar face out of context and can't place it. We cannot consciously remember the prior scene, but our brains recognize the similarity.



OUR EXPERIMENT

We conducted a survey to understand more about what people think about this fascinating concept and to try and categorize and explain this occurrence with certain variables like stress, travel experience, neurological issues and age.

We posed different questions based on different theories and understandings of this phenomenon, hoping to confirm our thoughts on the matter.

Our Questions

AGE GROUP

As people grow older, their brain gets less active, their memory gets weaker and we expect them to experience déjà vu less often.

NEUROLOGICAL ISSUES

It has been scientifically proven that people with neurological issues like temporal lobe epilepsy experience severe déjà vu and this happens to them more often than others.

TRAVEL FREQUENCY

Travel gives us many memories, some of which get buried in our subconscious and some that we simply forget, but retain some details of. These can cause déjà vu when in even barely-similar situations.

LEVEL OF EDUCATION

A theory mentions that higher educated people have more knowledge, understanding, stimulated brains and thus more visualizations which trigger déjà vu more often.

STRESS

Another theory states that when stressed, neurons fire many messages and the mind has many subconscious thoughts all at once, which uses the person's current scenario to cause stress-induced déjà vu.

TRIGGER

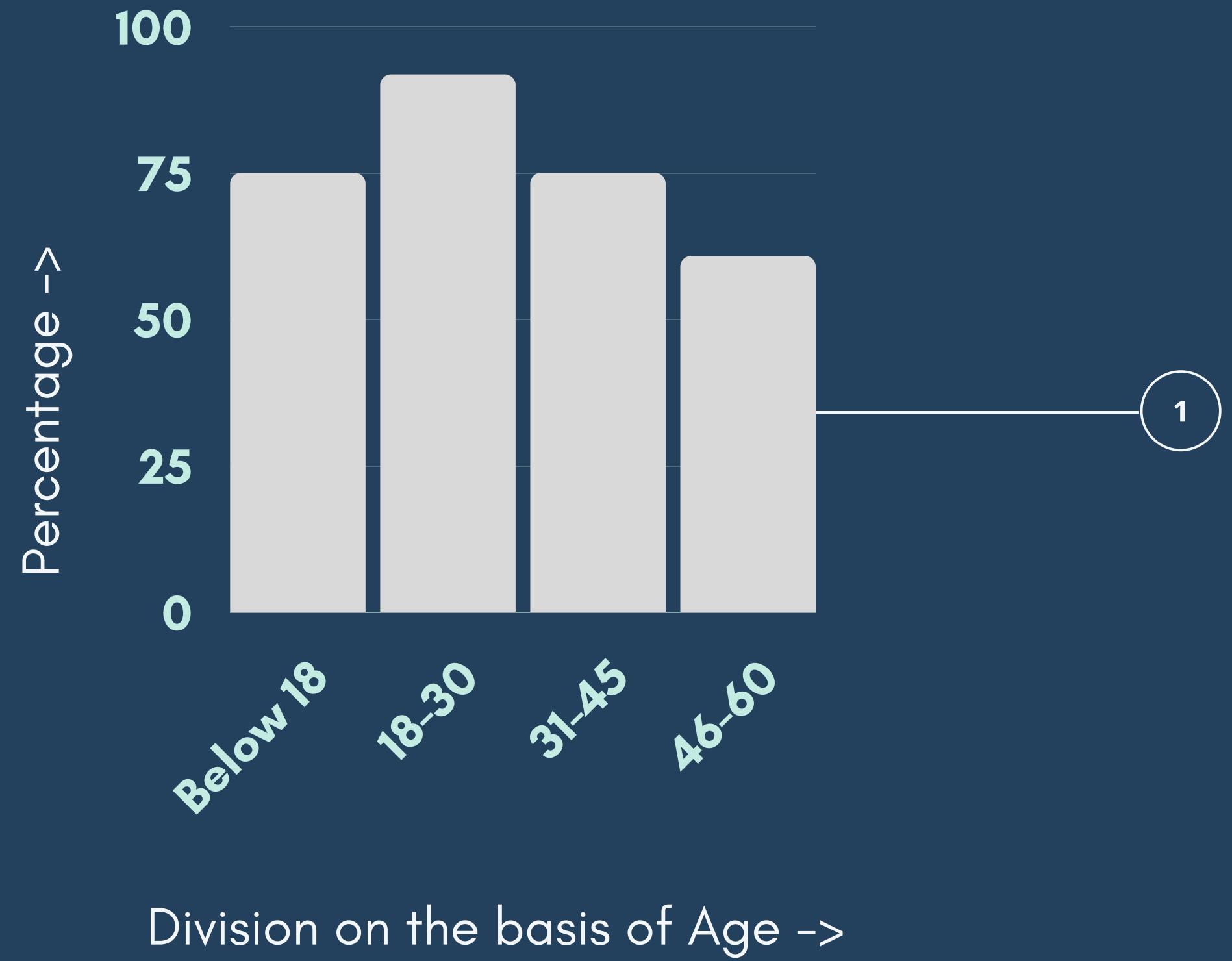
We asked the subjects to tell us what triggered the experience for them, be it location, sounds, dreams etc. We did this to categorize and analyse the frequency and variety of trigger factors.

Analysis of Results

Chart 1:

Data collected from people reflected that 75% of subjects below the age of 18 experienced Deja Vu whereas 91.8% of subjects aged between 18-30 experienced it. 75% of them between 31-45 went through Deja Vu while 60.8% of those aged 46-60 experienced it.

Our observations aligned with our hypothesis that as age increases, people tend to experience Deja Vu less.

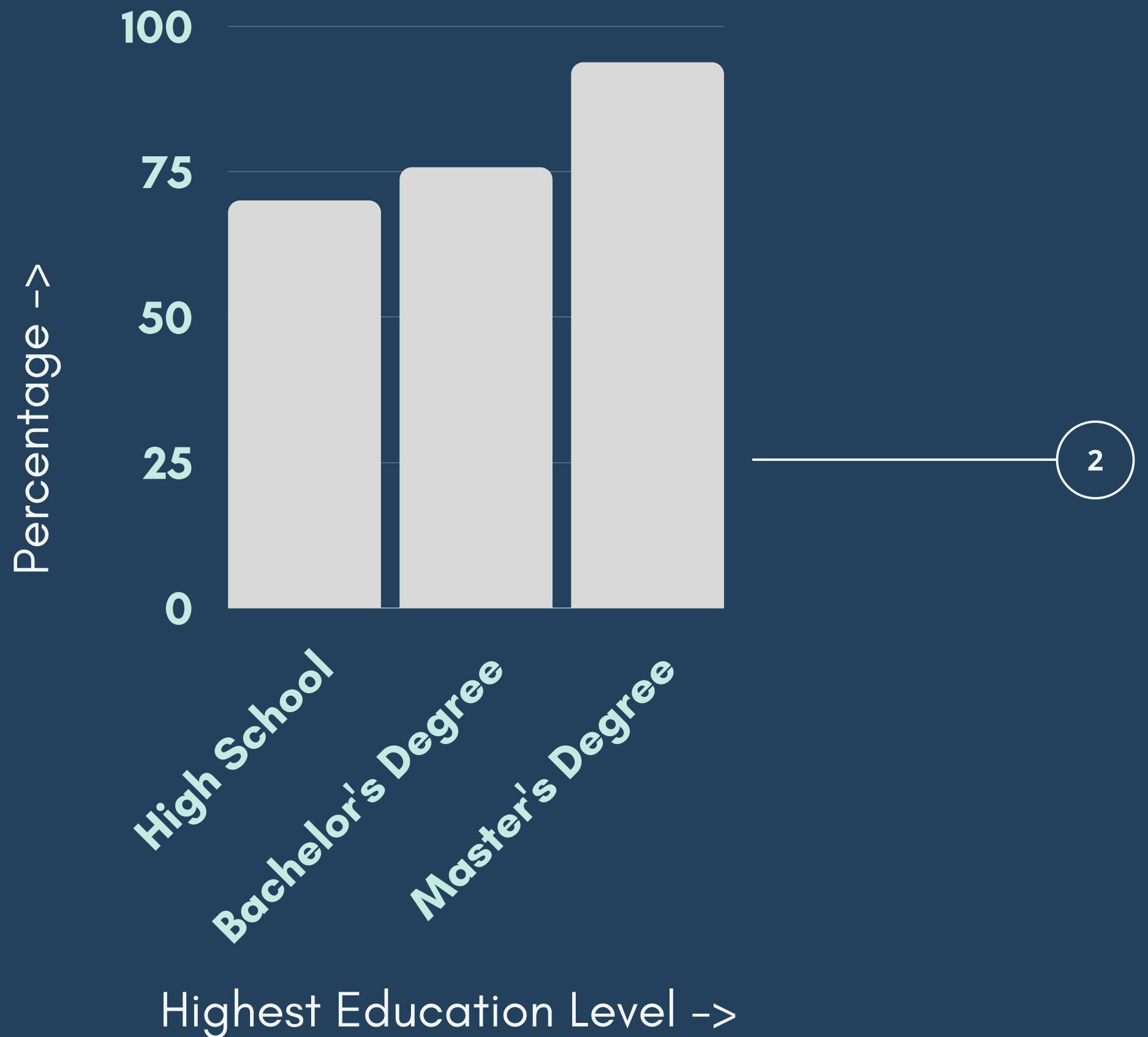


Analysis of Results

Chart 2:

The results we got from the survey reflect that 70% of people whose highest education level is high school experienced Deja Vu, while 76% of people with a Bachelor's Degree experienced Deja Vu. About 94% of subjects who've pursued Master's Degree experienced Deja Vu.

Again, our observations aligned with our hypothesis that highly educated people experience Deja Vu more because of more visualisations that trigger the experience.



Analysis of Results

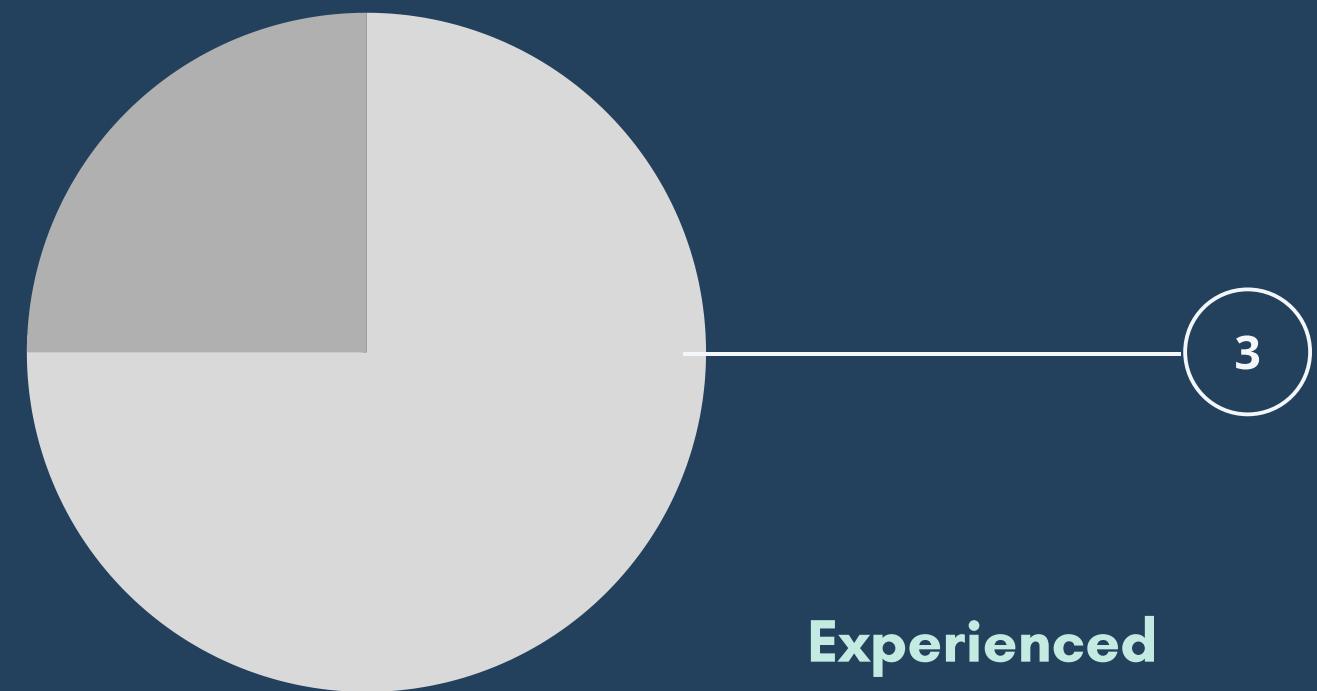
Chart 3:

Data collected from people with neurological disorders states that 25% of them have never experienced Deja vu, 50% of them experience Deja Vu rarely, and the remaining 25% experience Deja Vu often.

Therefore, we inferred that not all people with neurological issues experience Deja Vu, rather it depends on which part of the brain has been affected and whether it impacts the memory or not.

Did not experience Deja Vu

25%



People with Neurological Disorders

Analysis of Results

Chart 4:

From the set of people who experienced stress often, we found that 84% of them experienced Deja Vu whereas 70% of people who experienced stress sometimes experienced Deja Vu. Of the people who experienced stress rarely, 50% experienced Deja Vu.

Our observations aligned with our hypothesis that stress induces Deja Vu due to the many subconscious thoughts at once.

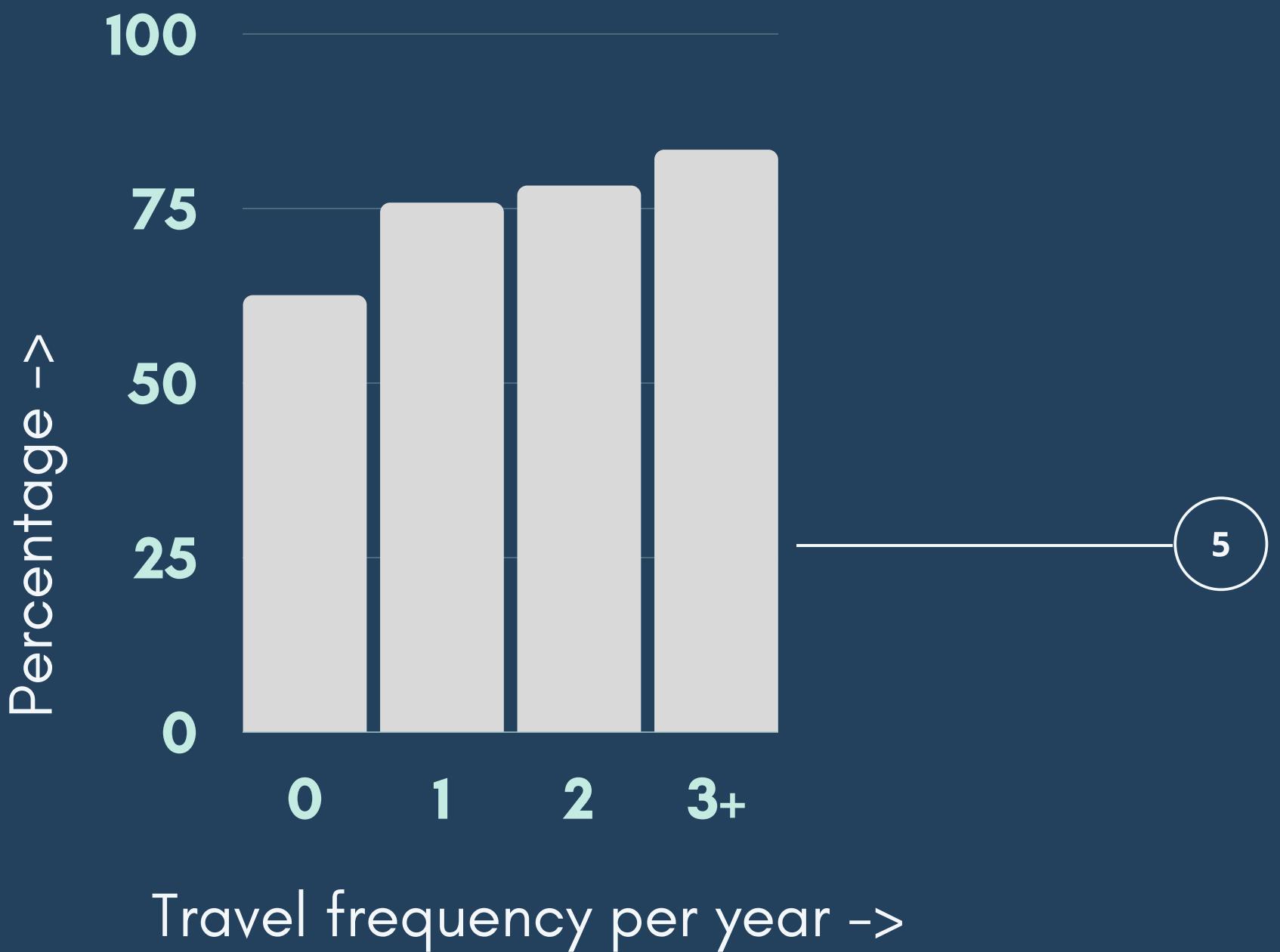


Analysis of Results

Chart 5:

Data received for travel experiences suggests that 62.5% of subjects who did not travel even once a year experienced Deja Vu, while 75.75% of subjects who travelled once a year experienced it. 78.2% of subjects who travelled twice a year experienced Deja Vu, while 83.34% of subjects who travelled thrice or more experienced it.

Our observations align with our hypothesis that people who travel more, tend to experience Deja Vu more.

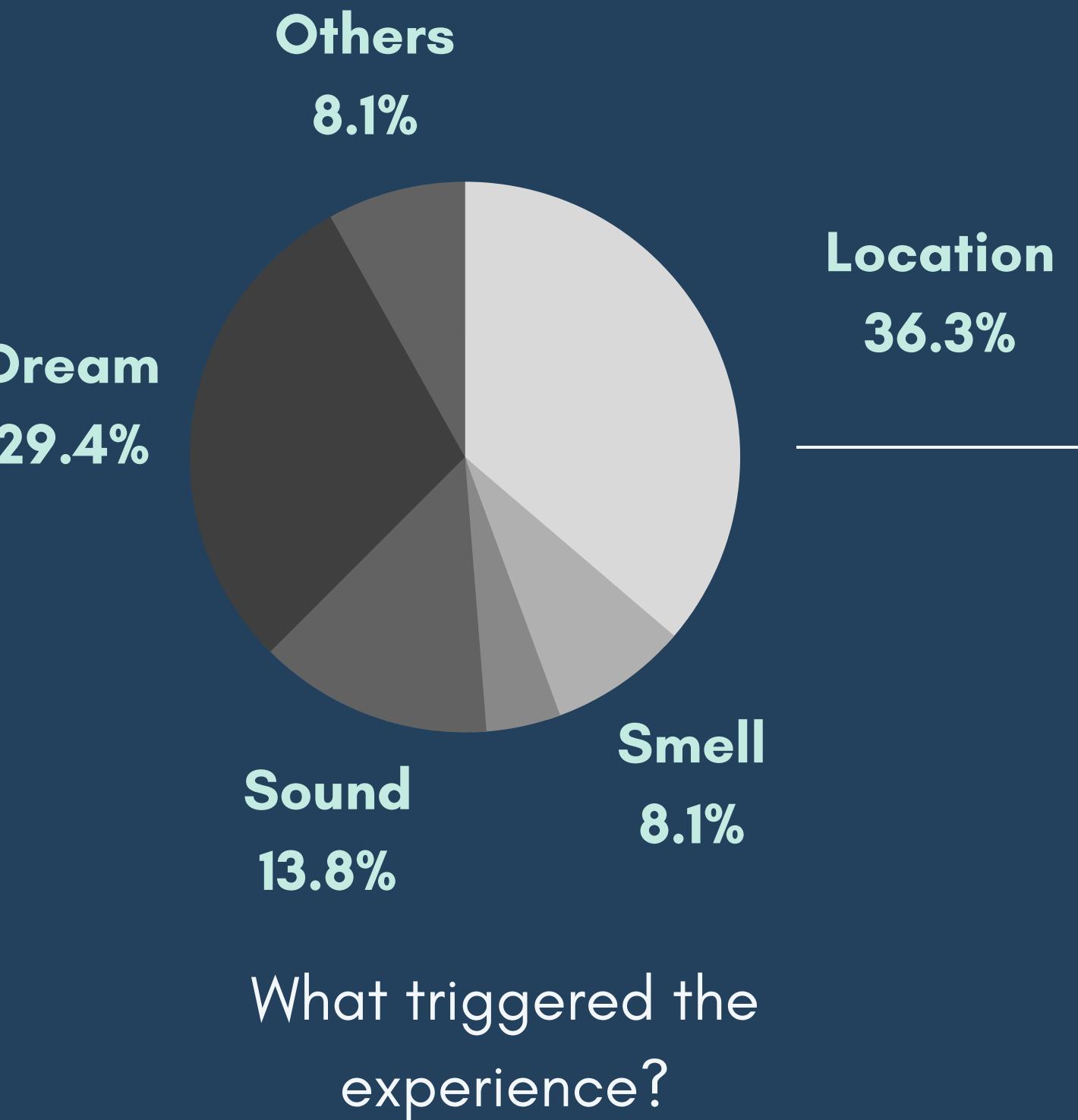


Analysis of Results

Chart 6:

This chart accounts for all the factors that triggered the experience of Deja Vu for our subjects.

These factors mainly include location, dream, taste, smell, sound while other constituting factors include familiar people, similar events, similar actions done by the subject, similar dialogues, similar thoughts, similar visuals, etc.



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