



Does going to university in a different country affect your mental health? A Japanese international university surveyed its students in 2018 and published a study the following year that was approved by several ethical and regulatory boards.

The study found that international students have a higher risk of mental health difficulties than the general population, and that social connectedness (belonging to a social group) and acculturative stress (stress associated with joining a new culture) are predictive of depression.

Explore the `students` data using PostgreSQL to find out if you would come to a similar conclusion for international students and see if the length of stay is a contributing factor.

Here is a data description of the columns you may find helpful.

Field Name	Description
<code>inter_dom</code>	Types of students (international or domestic)
<code>japanese_cate</code>	Japanese language proficiency
<code>english_cate</code>	English language proficiency
<code>academic</code>	Current academic level (undergraduate or graduate)
<code>age</code>	Current age of student
<code>stay</code>	Current length of stay in years
<code>todep</code>	Total score of depression (PHQ-9 test)
<code>tosc</code>	Total score of social connectedness (SCS test)
<code>toas</code>	Total score of acculturative stress (ASISS test)

...	↑↓	i..	...	↑↓	...	↑↓	...	↑↓	...	↑↓	...	↑↓	s.	...	↑↓	...	↑↓	japane...	...	↑↓	...	↑↓
0		Inter		SEA		Male		Grad		24		4		5		Long		3		Average		5
1		Inter		SEA		Male		Grad		28		5		1		Short		4		High		4
2		Inter		SEA		Male		Grad		25		4		6		Long		4		High		4
3		Inter		EA		Female		Grad		29		5		1		Short		2		Low		3
4		Inter		EA		Female		Grad		28		5		1		Short		1		Low		3
5		Inter		SEA		Male		Grad		24		4		6		Long		3		Average		4
6		Inter		SA		Male		Grad		23		4		1		Short		3		Average		5
7		Inter		SEA		Female		Grad		30		5		2		Medium		1		Low		1
8		Inter		SEA		Female		Grad		25		4		4		Long		4		High		4
9		Inter		Others		Male		Grad		31		5		2		Medium		1		Low		4

Rows: 10

Expand



Analyzing Students' Mental Health using SQL

This project explores the relationship between **language proficiency**, **academic level**, and **length of stay** on students' **mental health indicators** — including depression, stress, and social connectedness.

The analysis is based on a dataset from an international Japanese university survey (2018), available in the `students` table.

Objectives

1. Explore distributions of key categorical variables.
2. Compare average depression, stress, and social connectedness across groups.
3. Identify possible relationships between:
 - English proficiency ↔ Depression / Connectedness
 - Academic level ↔ Stress
 - Stay duration ↔ Depression / Stress

Tools Used

- SQL in DataCamp Datalab
- PostgreSQL syntax
- Built-in visualization (Charts tab) for bar and line plots

Dataset Preview

Here we can see the first 10 records. Each row represents a student with attributes such as region, gender, academic level, language proficiency, and psychological test scores.

We'll focus mainly on:

- `stay_cate`
- `english_cate`
- `academic`
- `todep`, `toas`, `tosc`

...	↑↓	i..	...	↑↓	...	↑↓	...	↑↓	...	↑↓	...	↑↓	s.	...	↑↓	...	↑↓	japane...	...	↑↓	...	↑↓
0		Inter		SEA		Male		Grad		24		4		5		Long		3		Average		5
1		Inter		SEA		Male		Grad		28		5		1		Short		4		High		4
2		Inter		SEA		Male		Grad		25		4		6		Long		4		High		4
3		Inter		EA		Female		Grad		29		5		1		Short		2		Low		3
4		Inter		EA		Female		Grad		28		5		1		Short		1		Low		3
5		Inter		SEA		Male		Grad		24		4		6		Long		3		Average		4
6		Inter		SA		Male		Grad		23		4		1		Short		3		Average		5
7		Inter		SEA		Female		Grad		30		5		2		Medium		1		Low		1
8		Inter		SEA		Female		Grad		25		4		4		Long		4		High		4
9		Inter		Others		Male		Grad		31		5		2		Medium		1		Low		4
<div><div>◀</div><div></div><div>▶</div></div>																						
Rows: 10 <div>↗ Expand</div>																						

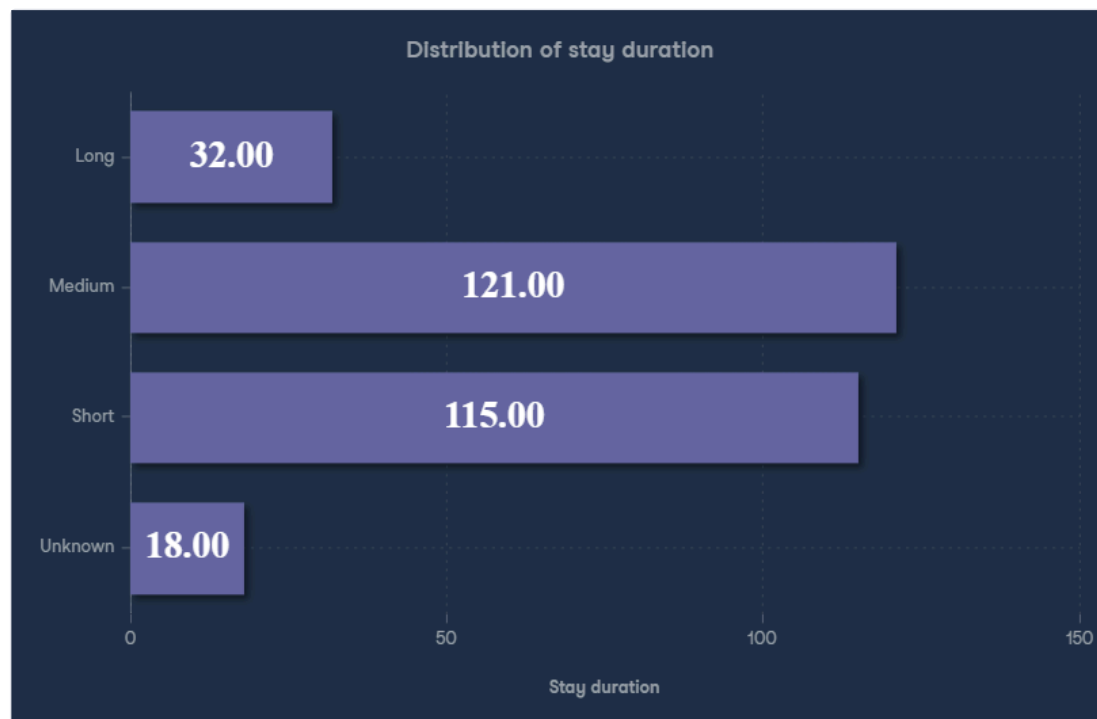
Interpreting Distributions

These simple aggregations help understand how balanced the dataset is. For example:

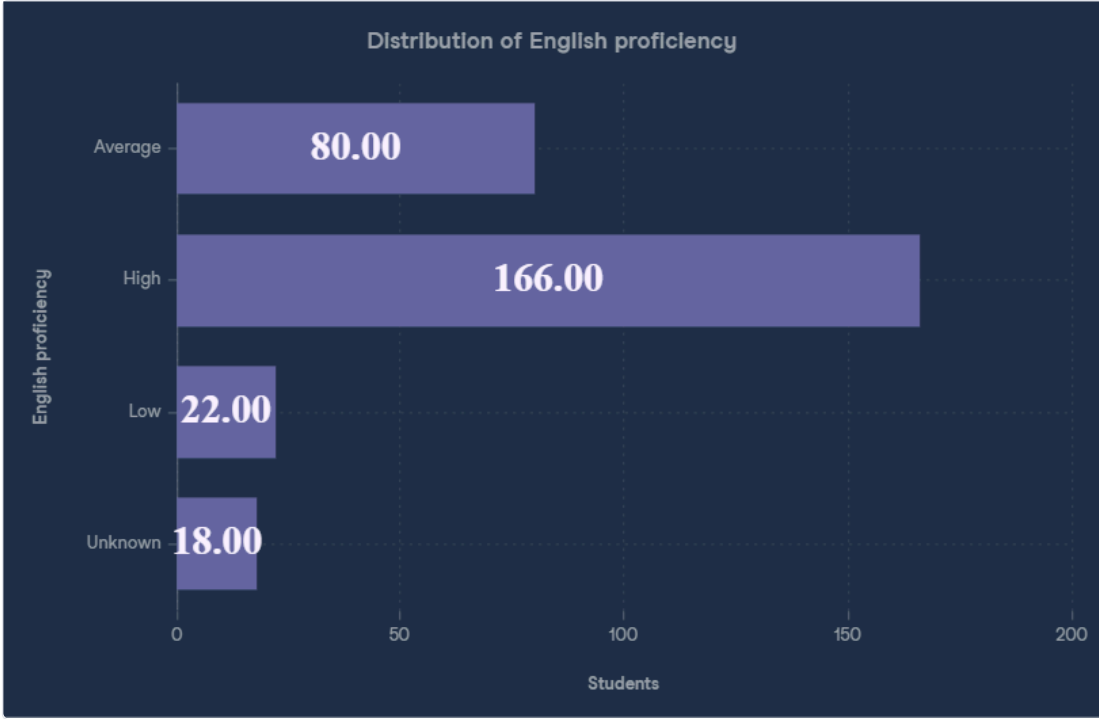
- If most students are in **Short** stay, the results may be skewed.
- Balanced categories = more reliable comparisons.

index	...	↑↓	stay_cate	...	↑↓	total_students	...	↑↓
0			Long			32		
1			Medium			121		
2			Short			115		
3			Unknown			18		

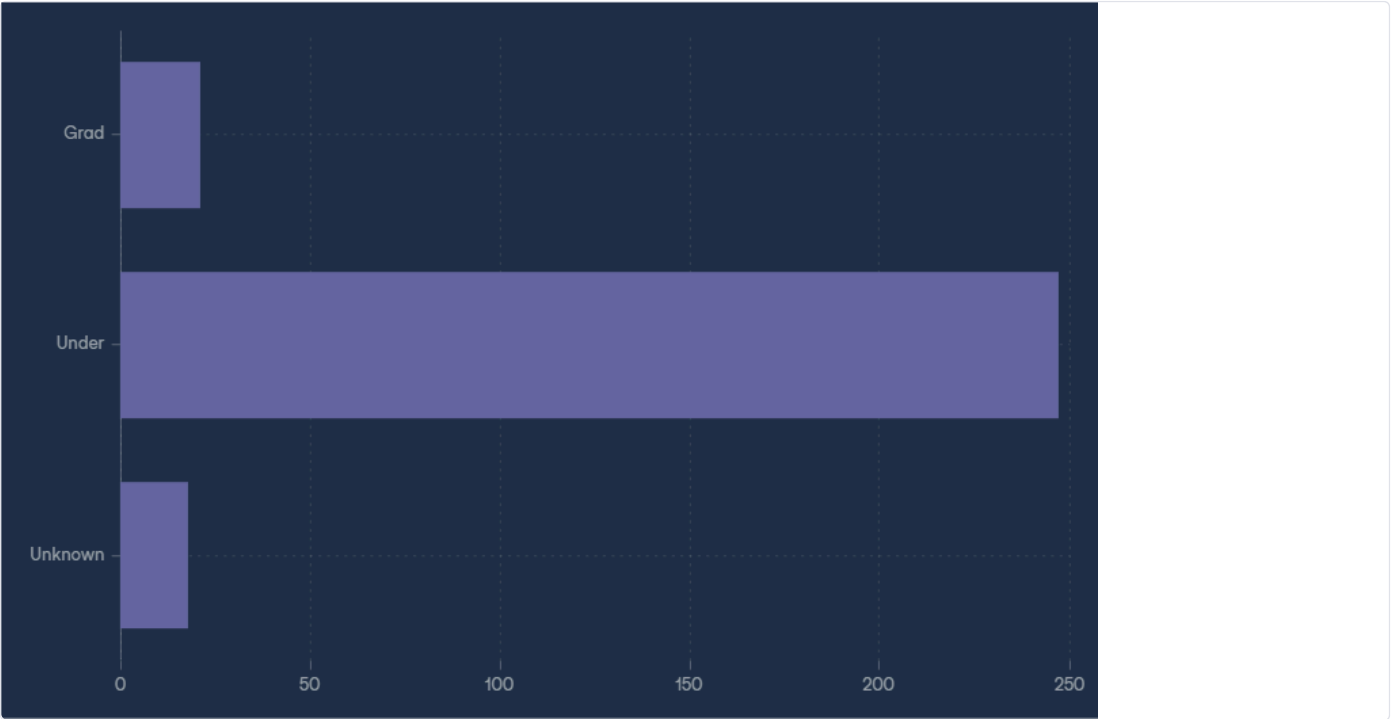
Rows: 4



index	...	↑↓	english_cate	...	↑↓	total_students	...	↑↓	
		0	Average			80			
		1	High			166			
		2	Low			22			
		3	Unknown			18			
Rows: 4									↗ Expand



index	...	↑↓	academic	...	↑↓	total_students	...	↑↓	
		0	Grad			21			
		1	Under			247			
		2	Unknown			18			
Rows: 3									↗ Expand



Analyzing the relationships between psychological factors and socio-academic variables.

Relationship 1 – Stay Duration vs Mental Health

Longer stays are associated with slightly higher stress and lower social connectedness, while depression levels remain relatively stable across groups.

i.	...	↑↓	stay_catego...	...	↑↓	avg_depression	...	↑↓	avg_s...	...	↑↓	avg_connectedness	...	↑↓	
0			Short			7.7			71.03			37.94			
1			Medium			8.74			72.86			37.48			
2			Long			7.84			75.44			35.78			
3			Unknown												

Rows: 4

Expand



Summary

Students with **longer stays** show the **highest connectedness (75.4)** and **lowest depression (7.7)**.

Relationship 2: English Proficiency vs Mental Health

...	↑↓	english_cat...	...	↑↓	avg_dep...	...	↑↓	a...	...	↑↓	avg_connect...	...	↑↓	
	0	Low			9.32			68.36			37.05			
	1	Average			8.31			67.44			38.48			
	2	High			7.98			75.3			37.05			
	3	Unknown												
Rows: 4														Expand



Summery

Students with higher English proficiency show lower depression levels but higher stress, possibly due to academic pressure. Social connectedness remains relatively stable across proficiency levels.

Relationship 3: Academic Level vs Mental Health

...	↑↓	academi...	...	↑↓	avg_dep...	...	↑↓	a...	...	↑↓	avg_connect...	...	↑↓	
	0	Under			8.43			72.07			37.16			
	1	Grad			5.29			76.05			41.19			
	2	Unknown												
Rows: 3														↗ Expand



Summery

Graduate students show **lower depression** (5.29) but **higher stress** (76.05) and **stronger social connectedness** (41.19) compared to undergraduates.

This suggests that while graduate students may handle emotional challenges better, they experience higher pressure and maintain more academic or social engagement.

Final Insights

- Longer stays are linked with **better mental well-being**.
- Higher English proficiency tends to **reduce depression and stress**.
- Graduate students show **lower depression** but **higher stress** levels. Overall, mental health seems influenced by adaptation, language comfort, and academic pressure.