

## PROJECT: ANALYZING STUDENTS' MENTAL HEALTH

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)

Projects Data DataFrame as students

-- Run this code to view the data in students

```
SELECT *
FROM students;
```

...	↑↓	i...	...	↑↓	...	↑↓	...	↑↓	...	↑↓	...	↑↓	s...	...	↑↓	...	↑↓	japane...	...	↑↓	...	↑↓	engli...	...	↑↓	...	↑↓	...
0		Inter		SEA		Male		Grad		24		4		5		Long		3		Average		5		High				Yes
1		Inter		SEA		Male		Grad		28		5		1		Short		4		High		4		High				No
2		Inter		SEA		Male		Grad		25		4		6		Long		4		High		4		High		Yes		Yes
3		Inter		EA		Female		Grad		29		5		1		Short		2		Low		3		Average		No		No
4		Inter		EA		Female		Grad		28		5		1		Short		1		Low		3		Average		Yes		No
5		Inter		SEA		Male		Grad		24		4		6		Long		3		Average		4		High		Yes		No
6		Inter		SA		Male		Grad		23		4		1		Short		3		Average		5		High		Yes		No
7		Inter		SEA		Female		Grad		30		5		2		Medium		1		Low		1		Low		Yes		Yes
8		Inter		SEA		Female		Grad		25		4		4		Long		4		High		4		High		No		No
9		Inter		Others		Male		Grad		31		5		2		Medium		1		Low		4		High		Yes		Yes
10		Inter		Others		Female		Grad		28		5		1		Short		1		Low		2		Low		No		Yes
11		Inter		SEA		Female		Grad		31		5		1		Short		1		Low		4		High		Yes		Yes
12		Inter		SA		Male		Grad		29		5		1		Short		1		Low		4		High		Yes		Yes
13		Inter		EA		Male		Grad		23		4		1		Short		3		Average		4		High		Yes		Yes
14		Inter		SEA		Female		Grad		31		5		1		Short		1		Low		3		Average		Yes		No
15		Inter		Others		Female		Grad		30		5		1		Short		1		Low		5		High		Yes		Yes

Rows: 286

Expand

Projects Data DataFrame as df

```
SELECT *
FROM students
LIMIT 5;
```

...	↑↓	i...	...	↑↓	...	↑↓	...	↑↓	...	↑↓	...	↑↓	s...	...	↑↓	...	↑↓	japane...	...	↑↓	...	↑↓	engli...	...	↑↓	...	↑↓	...
0		Inter		SEA		Male		Grad		24		4		5		Long		3		Average		5		High				Yes
1		Inter		SEA		Male		Grad		28		5		1		Short		4		High		4		High				No
2		Inter		SEA		Male		Grad		25		4		6		Long		4		High		4		High		Yes		Yes
3		Inter		EA		Female		Grad		29		5		1		Short		2		Low		3		Average		No		No
4		Inter		EA		Female		Grad		28		5		1		Short		1		Low		3		Average		Yes		No

Rows: 5

Expand

## Step 2: Count International vs Domestic Students

Projects Data DataFrame as

```
SELECT inter_dom, COUNT(*) AS count
FROM students
GROUP BY inter_dom;
```

...	↑↓	i...	...	↑↓	...	↑↓
0		Dom			67	
1					18	
2		Inter			201	

Rows: 3

Expand

TO Check the number of international vs. domestic students TO understand the sample distribution — whether the data is balanced or skewed towards one group.

Step 3: Compare Average Depression Scores (PHQ-9) We now compare depression scores (todep) between international and domestic students.

 Projects Data    DataFrame as

```
SELECT inter_dom, AVG(todep) AS avg_depression
FROM students
GROUP BY inter_dom;
```

...	↑↓	i..	...	↑↓	avg_dep...	...	↑↓
0		Dom			8.6119402985		
1							
2		Inter			8.0447761194		

Rows: 3

 Expand

international students report slightly lower levels of depression on average therefore slightly supporting the study's findings.

Step 4: Check Correlation with Social Connectedness Now examine the relationship between depression and social connectedness (tosc).

 Projects Data    DataFrame as

```
SELECT CORR(todep, tosc) AS corr_depression_social
FROM students;
```

...	↑↓	corr_depression_social	...	↑↓
0		-0.5517952837		

Rows: 1

 Expand

A negative correlation indicating that as social connectedness increases, depression tends to decrease.

3b: Correlation between acculturative stress and depression

 Projects Data    DataFrame as

```
SELECT CORR(toas, todep) AS corr_acculturative_stress_depression
FROM students;
```

...	↑↓	corr_acculturative_stress_depression	...	↑↓
0		0.3940945338		

Rows: 1

 Expand

A positive correlation suggesting that higher acculturative stress is linked to higher depression.

Does Length of Stay Influence Depression? Let's see if the length of stay has any relation with depression.

 Projects Data DataFrame as

```
-- Find the number of international students and their average scores by length of stay, in descending order of length of stay
SELECT stay AS stay,
       COUNT(*) AS count_int,
       ROUND(AVG(todep), 2) AS average_phq,
       ROUND(AVG(tosc), 2) AS average_scs,
       ROUND(AVG(toas), 2) AS average_as
FROM students
WHERE inter_dom = 'Inter'
GROUP BY stay
ORDER BY stay DESC;
```

...	↑↓	...	↑↓	c.	...	↑↓	av...	...	↑↓	av...	...	↑↓	a...	...	↑↓
0		10		1			13			32			50		
1		8		1			10			44			65		
2		7		1			4			48			45		
3		6		3			6			38			58.67		
4		5		1			0			34			91		
5		4		14			8.57			33.93			87.71		
6		3		46			9.09			37.13			78		
7		2		39			8.28			37.08			77.67		
8		1		95			7.48			38.11			72.8		

Rows: 9

 Expand

positive correlation indicating length of stay could be a contributing factor (positive or negative).