In [8]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
data = pd.read_csv(r"C:\Users\IT\Desktop\saranya\public health awareness.csv")
data.head()
```

Out[8]:

	Timestamp	Age	Gender	Country	state	self_employed	family_history	treatment	work_interfere	no_employees	...	leave	mental_health_consequence	phys_health_consequence	coworkers	s
0	2014-08-27 11:29:31	37	Female	United States	IL	NaN	No	Yes	Often	6-25	...	Somewhat easy	No	No	Some of them	
1	2014-08-27 11:29:37	44	M	United States	IN	NaN	No	No	Rarely	More than 1000	...	Don't know	Maybe	No	No	
2	2014-08-27 11:29:44	32	Male	Canada	NaN	NaN	No	No	Rarely	6-25	...	Somewhat difficult	No	No	Yes	
3	2014-08-27 11:29:46	31	Male	United Kingdom	NaN	NaN	Yes	Yes	Often	26-100	...	Somewhat difficult	Yes	Yes	Some of them	
4	2014-08-27 11:30:22	31	Male	United States	TX	NaN	No	No	Never	100-500	...	Don't know	No	No	Some of them	

5 rows × 27 columns

In [22]:
```
if data.isnull().sum().sum() == 0 :
    print ('There is no missing data in our dataset')
else:
    print('There is {} missing data in our dataset '.format(data.isnull().sum().sum()))
```

```
There is 1892 missing data in our dataset
```

In [23]:
```
frame = pd.concat([data.isnull().sum(), data.nunique(), data.dtypes], axis = 1, sort= False)
frame
```

Out[23]:

	0	1	2
Timestamp	0	1246	object
Age	0	53	int64
Gender	0	49	object
Country	0	48	object
state	515	45	object
self_employed	18	2	object
family_history	0	2	object
treatment	0	2	object
work_interfere	264	4	object
no_employees	0	6	object
remote_work	0	2	object
tech_company	0	2	object
benefits	0	3	object
care_options	0	3	object
wellness_program	0	3	object
seek_help	0	3	object
anonymity	0	3	object
leave	0	5	object
mental_health_consequence	0	3	object
phys_health_consequence	0	3	object
coworkers	0	3	object
supervisor	0	3	object
mental_health_interview	0	3	object
phys_health_interview	0	3	object
mental_vs_physical	0	3	object
obs_consequence	0	2	object
comments	1095	160	object

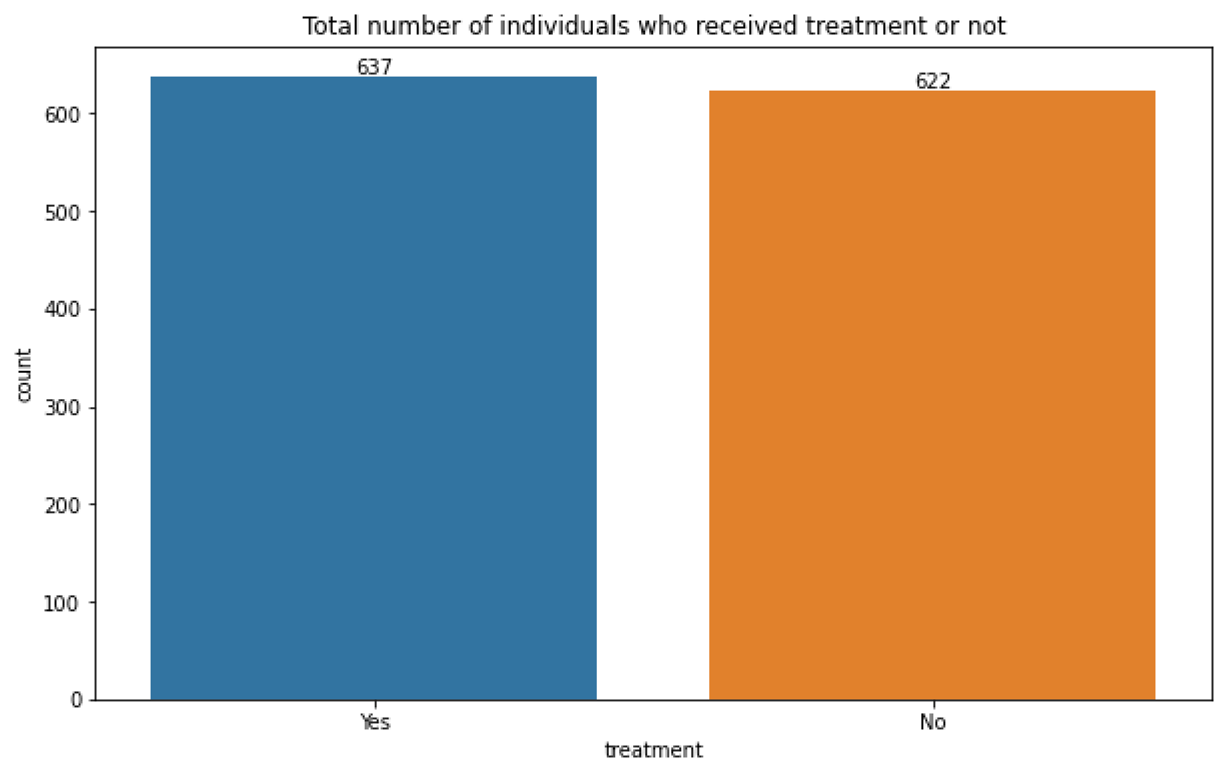
In [26]:
```
from sklearn.impute import SimpleImputer

data = data.drop(columns=['state', 'comments', 'Timestamp', ])
from sklearn.preprocessing import LabelEncoder

le = LabelEncoder()

columns_to_encode = ['Gender', 'Country', 'self_employed','family_history', 'treatment', 'work_interfere','no_employees',
                             'remote_work', 'tech_company','benefits','care_options', 'wellness_program',
                             'seek_help', 'anonymity', 'leave', 'mental_health_consequence', 'phys_health_consequence',
                             'coworkers', 'supervisor', 'mental_health_interview','phys_health_interview',
                             'mental_vs_physical', 'obs_consequence']
for columns in columns_to_encode:
    data[columns] = le.fit_transform(data[columns])

data.info()
data['work_interfere'] = SimpleImputer(strategy = 'most_frequent').fit_transform(data['work_interfere'].values.reshape(-1,1))
data['self_employed'] = SimpleImputer(strategy = 'most_frequent').fit_transform(data['self_employed'].values.reshape(-1,1))

data.head()
```

Out[26]:

	Age	Gender	Country	self_employed	family_history	treatment	work_interfere	no_employees	remote_work	tech_company	...	anonymity	leave	mental_health_consequence	phys_health_cons
0	37	Female	United States	No	No	Yes	Often	6-25	No	Yes	...	Yes	Somewhat easy	No	
1	44	M	United States	No	No	No	Rarely	More than 1000	No	No	...	Don't know	Don't know	Maybe	
2	32	Male	Canada	No	No	No	Rarely	6-25	No	Yes	...	Don't know	Somewhat difficult	No	
3	31	Male	United Kingdom	No	Yes	Yes	Often	26-100	No	Yes	...	No	Somewhat difficult	Yes	
4	31	Male	United States	No	No	No	Never	100-500	Yes	Yes	...	Don't know	Don't know	No	

5 rows × 24 columns

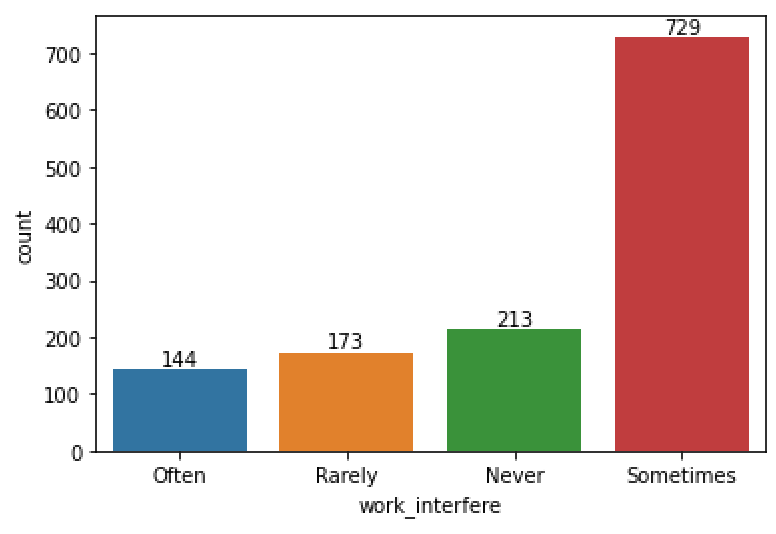
In [34]:
```
plt.figure(figsize = (10,6));
treat = sns.countplot(data = data,  x = 'treatment');
treat.bar_label(treat.containers[0]);
plt.title('Total number of individuals who received treatment or not');
```



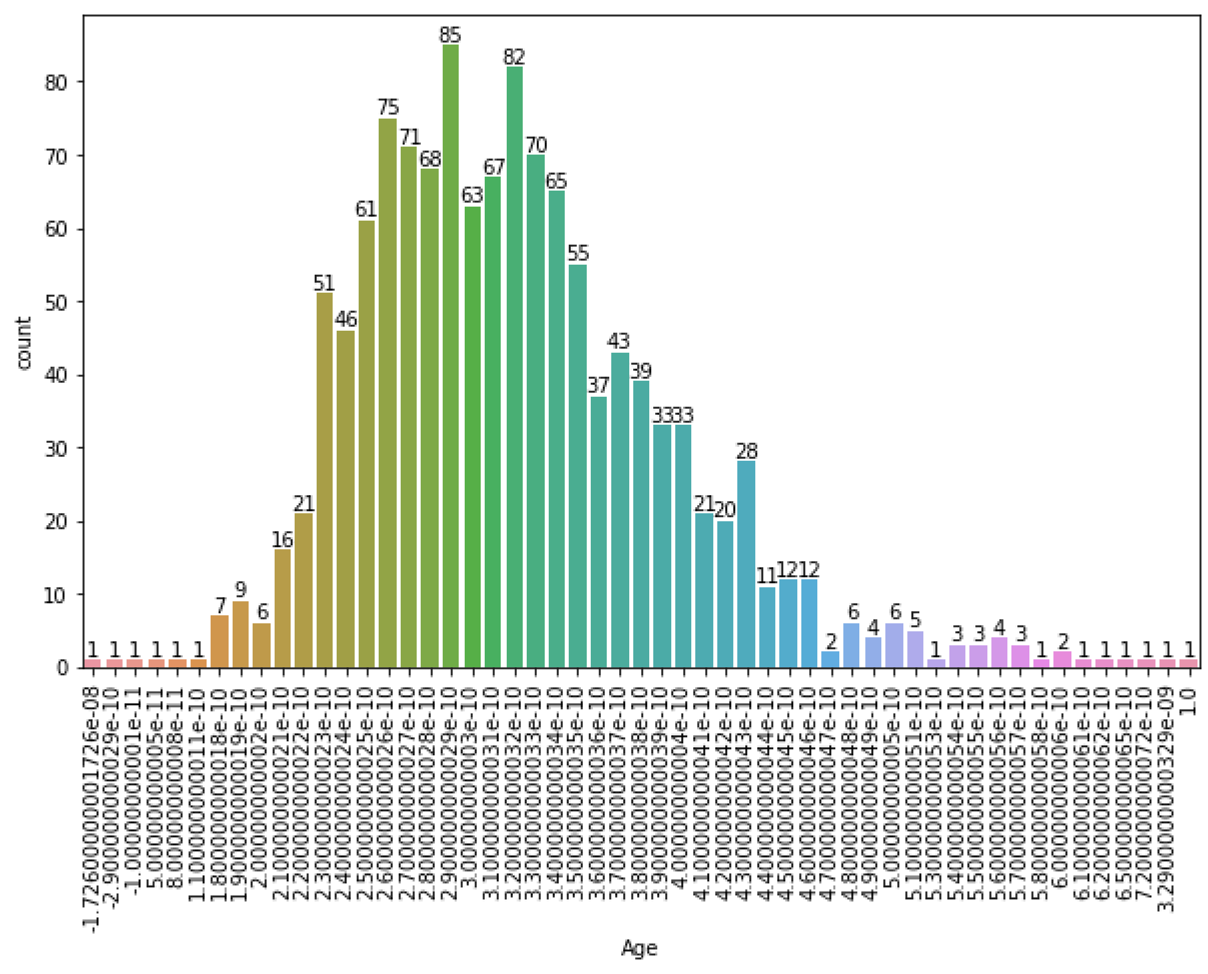
In [35]:
```
data['Age'].unique()
```

Out[35]:
```
array([ 3.700e-10,  4.400e-10,  3.200e-10,  3.100e-10,  3.300e-10,
        3.500e-10,  3.900e-10,  4.200e-10,  2.300e-10,  2.900e-10,
        3.600e-10,  2.700e-10,  4.600e-10,  4.100e-10,  3.400e-10,
        3.000e-10,  4.000e-10,  3.800e-10,  5.000e-10,  2.400e-10,
        1.800e-10,  2.800e-10,  2.600e-10,  2.200e-10,  1.900e-10,
        2.500e-10,  4.500e-10,  2.100e-10, -2.900e-10,  4.300e-10,
        5.600e-10,  6.000e-10,  5.400e-10,  3.290e-09,  5.500e-10,
        1.000e+00,  4.800e-10,  2.000e-10,  5.700e-10,  5.800e-10,
        4.700e-10,  6.200e-10,  5.100e-10,  6.500e-10,  4.900e-10,
       -1.726e-08,  5.000e-11,  5.300e-10,  6.100e-10,  8.000e-11,
        1.100e-10, -1.000e-11,  7.200e-10])
```

In [36]:
```
ax = sns.countplot(data=data, x='work_interfere');
ax.bar_label(ax.containers[0]);
```



In [37]:
```
plt.figure(figsize = (10,6))
age_range_plot = sns.countplot(data = data, x = 'Age');
age_range_plot.bar_label(age_range_plot.containers[0]);
plt.xticks(rotation=90);
```



In [ ]: