Answers

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1 Resolución de preguntas de tablas de indexmundi

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1.1 Tablas a utilizar:

- Taza de muerte
- Densidad de camas de hospital
- obesidad - taza de prevalencia en adultos

1.2 Preguntas para responder:

- ¿Cuáles son los países con mayor taza de muerte?
- ¿Cuáles son los países con mayor obesidad?
- ¿Cuáles son los países con mayor saturación de camas?
- ¿Cuál es el promedio de obesidad correspondiente a cada valor de taza de muertes?
- ¿Cuál es el promedio de saturación de camas correspondiente a cada valor de taza de muertes?
- ¿Cuál es el porcentaje de países cuya obesidad es mayor a 30%?
- ¿Cuál es el porcentaje de países cuya saturación de camas es menor a 5%?
- ¿Cuál es la moda de taza de muertes de países en Asia/Europa/America? (separado por continentes)
- ¿Cuál es la moda de obesidad de países en Asia/Europa/America? (separado por continentes)
- ¿Qué países tienen una taza de muerte mayor a 10 y un porcentaje de obesidad mayor a 30%?
- ¿Cuáles son los países con mayor taza de muerte y una taza de obesidad menor al 35%?
- ¿Cuáles son los países con mayor saturación de camas y un porcentaje de obesidad mayor al 35%?

1.2.1 Librerías iniciales y obtención de talbla “Death rate”:

[1]:
```
#Respuesta a las preguntas hechas con estadística descriptiva
import os
import numpy as np
import pandas as pd
```

```
#El modulo "requests" permite enviar solicitudes(delete, get, head) a un url␣
 ↪especifico
import requests
import scipy

#Leemos los datos de la tabla Death Rate
html = requests.get('https://www.indexmundi.com/map/?t=0&v=26&r=xx&l=en').
 ↪content
df_DR = pd.read_html('https://www.indexmundi.com/map/?t=0&v=26&r=xx&l=en')
```

[2]:
```
datos_DR = df_DR[1]
datos_DR.to_csv('DeathRate.csv')
datos_DR
```

[2]:

	Country	Death rate (deaths/1,000 population)	Year
0	Lesotho	15	2018
1	Lithuania	15	2018
2	Latvia	15	2018
3	Bulgaria	15	2018
4	Ukraine	14	2018
..	…	…	…
192	Saudi Arabia	3	2018
193	Bahrain	3	2018
194	Kuwait	2	2018
195	United Arab Emirates	2	2018
196	Qatar	2	2018

[197 rows x 3 columns]

1.2.2 Obtención de tabla “Hospital bed density”:

[3]:
```
#Leemos los datos de la tabla Hospital bed density
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2227&r=xx&l=en').
 ↪content
df_HB = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2227&r=xx&l=en')
datos_HB = df_HB[1]
datos_HB.to_csv('HospitalBeds.csv')
datos_HB
```

[3]:

	Country	Hospital bed density (beds/1,000 population)	Year
0	Monaco	14	2012
1	Japan	13	2012
2	Korea, North	13	2012
3	Korea, South	12	2015
4	Belarus	11	2013
..	…	…	…

```
167        Guinea                                                0  2011
168      Ethiopia                                                0  2015
169          Iran                                                0  2014
170    Madagascar                                                0  2010
171          Mali                                                0  2010

[172 rows x 3 columns]
```

1.2.3 Obtención de Tabla "Obesity":

[4]:
```
#Leemos los datos de la tabla Obesity
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2228&r=xx&l=en').
 ↪content
df_Ob = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2228&r=xx&l=en')
datos_Ob = df_Ob[1]
datos_Ob.to_csv('Obesity.csv')
datos_Ob
```

[4]:
```
         Country  Obesity - adult prevalence rate (%)  Year
0          Nauru                                   61  2016
1          Palau                                   55  2016
2         Tuvalu                                   52  2016
3          Tonga                                   48  2016
4          Samoa                                   47  2016
..           …                                   …   …
180        India                                    4  2016
181     Cambodia                                    4  2016
182   East Timor                                    4  2016
183   Bangladesh                                    4  2016
184      Vietnam                                     2  2016

[185 rows x 3 columns]
```

1.2.4 1. Los 50 países con mayor tasa de mortalidad

[5]:
```
import matplotlib.pyplot as plt
First50_DR = datos_DR.head(50)
First50_DR
```

[5]:
```
                            Country  Death rate (deaths/1,000 population)  \
0                           Lesotho                                    15
1                         Lithuania                                    15
2                            Latvia                                    15
3                          Bulgaria                                    15
4                           Ukraine                                    14
5                            Serbia                                    14
```

6	Russia	13
7	Belarus	13
8	Afghanistan	13
9	Central African Republic	13
10	Hungary	13
11	Somalia	13
12	Estonia	13
13	Moldova	13
14	Croatia	12
15	Romania	12
16	Zambia	12
17	Germany	12
18	Niger	12
19	Mozambique	11
20	Greece	11
21	Georgia	11
22	Swaziland	11
23	Portugal	11
24	Poland	11
25	Italy	11
26	Czech Republic	11
27	Chad	11
28	Montenegro	10
29	Sierra Leone	10
30	Monaco	10
31	Bosnia and Herzegovina	10
32	Finland	10
33	Japan	10
34	Slovakia	10
35	Slovenia	10
36	Zimbabwe	10
37	Uganda	10
38	Austria	10
39	Belgium	10
40	Macedonia	10
41	Mali	10
42	Nigeria	10
43	Armenia	10
44	Botswana	10
45	France	9
46	Congo, Democratic Republic of the	9
47	Cameroon	9
48	United Kingdom	9
49	Uruguay	9

	Year
0	2018

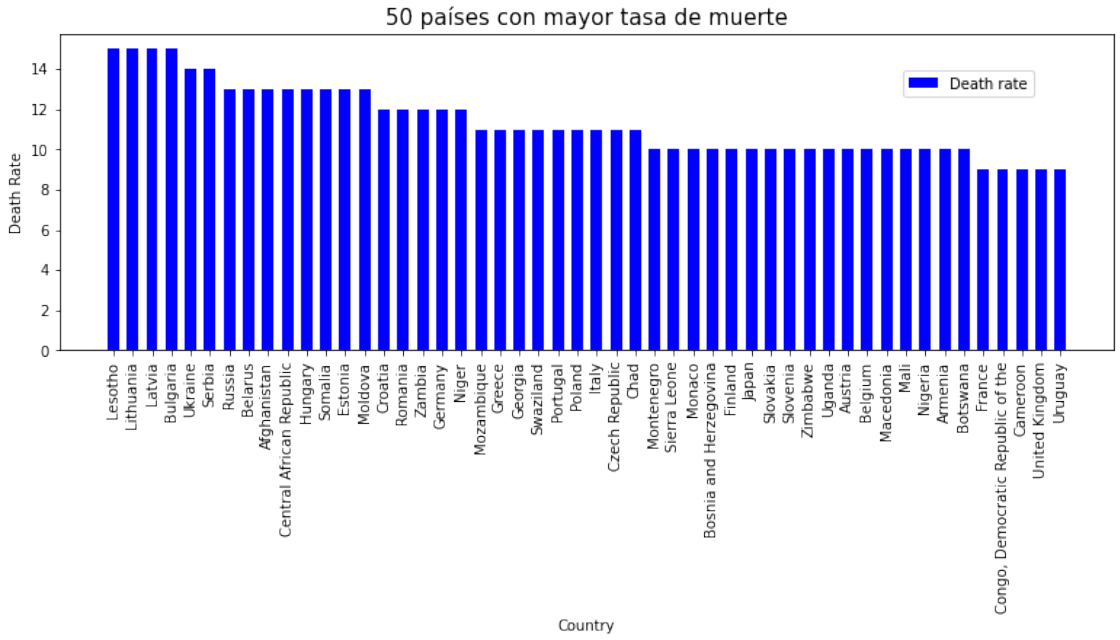
1	2018
2	2018
3	2018
4	2018
5	2018
6	2018
7	2018
8	2018
9	2018
10	2018
11	2018
12	2018
13	2018
14	2018
15	2018
16	2018
17	2018
18	2018
19	2018
20	2018
21	2018
22	2018
23	2018
24	2018
25	2018
26	2018
27	2018
28	2018
29	2018
30	2018
31	2018
32	2018
33	2018
34	2018
35	2018
36	2018
37	2018
38	2018
39	2018
40	2018
41	2018
42	2018
43	2018
44	2018
45	2018
46	2018
47	2018

```
48  2018
49  2018
```

[6]:
```
First50_DR.columns
```

[6]:
```
Index(['Country', 'Death rate (deaths/1,000 population)', 'Year'],
dtype='object')
```

[7]:
```
#Grafiquemos la tabla anterior
#Plot_DR = First50_DR.plot(x='Country', y='Death rate (deaths/1,000␣
 ↪population)', kind='bar', legend=True)
#Plot_DR.set_xlabel("50 paises con mayor tasa de muerte")
#Plot_DR.set_ylabel("Death rate")

%matplotlib inline

plt.figure(figsize=[13,4])
plt.bar(First50_DR['Country'], First50_DR['Death rate (deaths/1,000␣
 ↪population)'], width=0.6, color='blue', label='Death rate')
plt.xlabel('Country')
plt.ylabel('Death Rate')
#plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'blue', label="Moda")
plt.title("50 países con mayor tasa de muerte", fontsize=15)
plt.xticks(fontsize=10, rotation='vertical')
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
plt.show()
```



1.2.5 Los 50 países con menor tasa de mortalidad

[8]:
```
#Los 50 países con menor tasa de mortalidad
Last50_DR = datos_DR.tail(50)
Last50_DR
```

[8]:

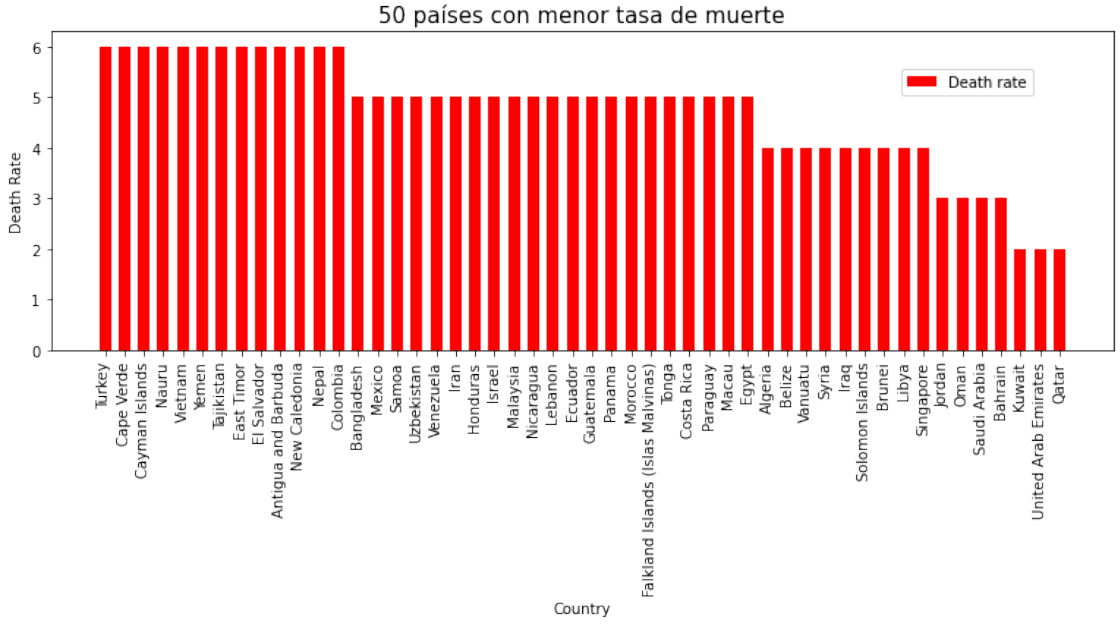
	Country	Death rate (deaths/1,000 population)	\
147	Turkey	6	
148	Cape Verde	6	
149	Cayman Islands	6	
150	Nauru	6	
151	Vietnam	6	
152	Yemen	6	
153	Tajikistan	6	
154	East Timor	6	
155	El Salvador	6	
156	Antigua and Barbuda	6	
157	New Caledonia	6	
158	Nepal	6	
159	Colombia	6	
160	Bangladesh	5	
161	Mexico	5	
162	Samoa	5	
163	Uzbekistan	5	
164	Venezuela	5	
165	Iran	5	
166	Honduras	5	
167	Israel	5	
168	Malaysia	5	
169	Nicaragua	5	
170	Lebanon	5	
171	Ecuador	5	
172	Guatemala	5	
173	Panama	5	
174	Morocco	5	
175	Falkland Islands (Islas Malvinas)	5	
176	Tonga	5	
177	Costa Rica	5	
178	Paraguay	5	
179	Macau	5	
180	Egypt	5	
181	Algeria	4	
182	Belize	4	
183	Vanuatu	4	
184	Syria	4	

185	Iraq	4
186	Solomon Islands	4
187	Brunei	4
188	Libya	4
189	Singapore	4
190	Jordan	3
191	Oman	3
192	Saudi Arabia	3
193	Bahrain	3
194	Kuwait	2
195	United Arab Emirates	2
196	Qatar	2

	Year
147	2018
148	2018
149	2018
150	2018
151	2018
152	2018
153	2018
154	2018
155	2018
156	2018
157	2018
158	2018
159	2018
160	2018
161	2018
162	2018
163	2018
164	2018
165	2018
166	2018
167	2018
168	2018
169	2018
170	2018
171	2018
172	2018
173	2018
174	2018
175	2012
176	2018
177	2018
178	2018
179	2018

```
180  2018
181  2018
182  2018
183  2018
184  2018
185  2018
186  2018
187  2018
188  2018
189  2018
190  2018
191  2018
192  2018
193  2018
194  2018
195  2018
196  2018
```

[9]:
```
#Grafiquemos la tabla anterior
#Plot_DR2 = Last50_DR.plot(x='Country', y='Death rate (deaths/1,000␣
 ↪population)', kind='bar', legend=True)
#Plot_DR2.set_xlabel("50 paises con menor tasa de muerte")
#Plot_DR2.set_ylabel("Death rate")
%matplotlib inline

plt.figure(figsize=[13,4])
plt.bar(Last50_DR['Country'], Last50_DR['Death rate (deaths/1,000␣
 ↪population)'], width=0.6, color='red', label='Death rate')
plt.xlabel('Country')
plt.ylabel('Death Rate')
#plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'blue', label="Moda")
plt.title("50 países con menor tasa de muerte", fontsize=15)
plt.xticks(fontsize=10, rotation='vertical')
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
plt.show()
```



1.2.6 2. Los 20 países con mayor densidad de camas de hospital

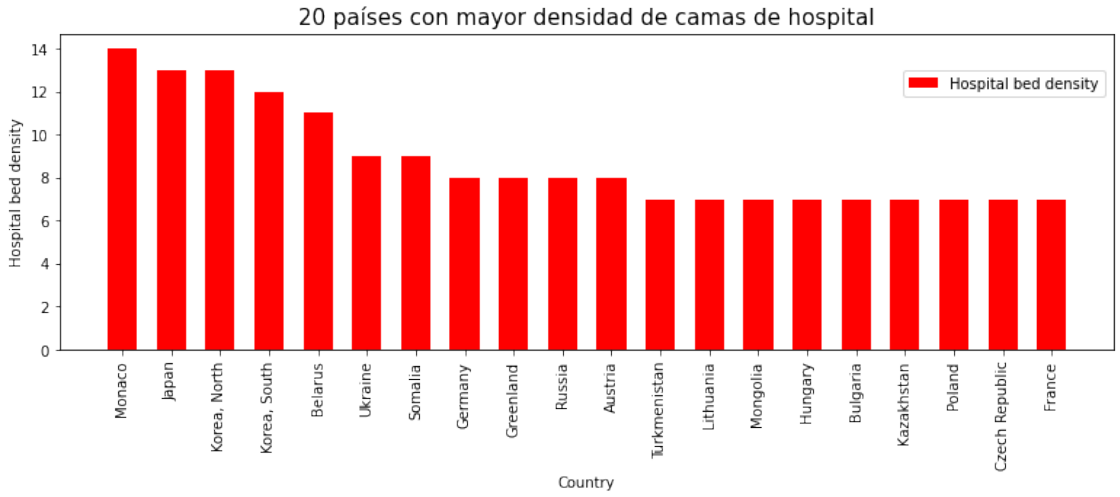
[10]:
```
#Los 20 países con mayor densidad de camas de hospital
First20_HB = datos_HB.head(20)
First20_HB
```

[10]:

	Country	Hospital bed density (beds/1,000 population)	Year
0	Monaco	14	2012
1	Japan	13	2012
2	Korea, North	13	2012
3	Korea, South	12	2015
4	Belarus	11	2013
5	Ukraine	9	2013
6	Somalia	9	2014
7	Germany	8	2013
8	Greenland	8	2015
9	Russia	8	2013
10	Austria	8	2013
11	Turkmenistan	7	2013
12	Lithuania	7	2013
13	Mongolia	7	2012
14	Hungary	7	2013
15	Bulgaria	7	2013
16	Kazakhstan	7	2013
17	Poland	7	2013
18	Czech Republic	7	2015

```
19          France                                                  7  2013
```

[11]:
```
#Grafiquemos la tabla anterior
plt.figure(figsize=[13,4])
plt.bar(First20_HB['Country'], First20_HB['Hospital bed density (beds/1,000␣
↪population)'], width=0.6, color='red', label='Hospital bed density')
plt.xlabel('Country')
plt.ylabel('Hospital bed density')
#plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
↪color = 'blue', label="Moda")
plt.title("20 países con mayor densidad de camas de hospital", fontsize=15)
plt.xticks(fontsize=10, rotation='vertical')
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
plt.show()
```



[12]:
```
First20_HB.columns
```

[12]:
```
Index(['Country', 'Hospital bed density (beds/1,000 population)', 'Year'],
dtype='object')
```

1.2.7 Los 20 países con menor densidad de camas de hospital

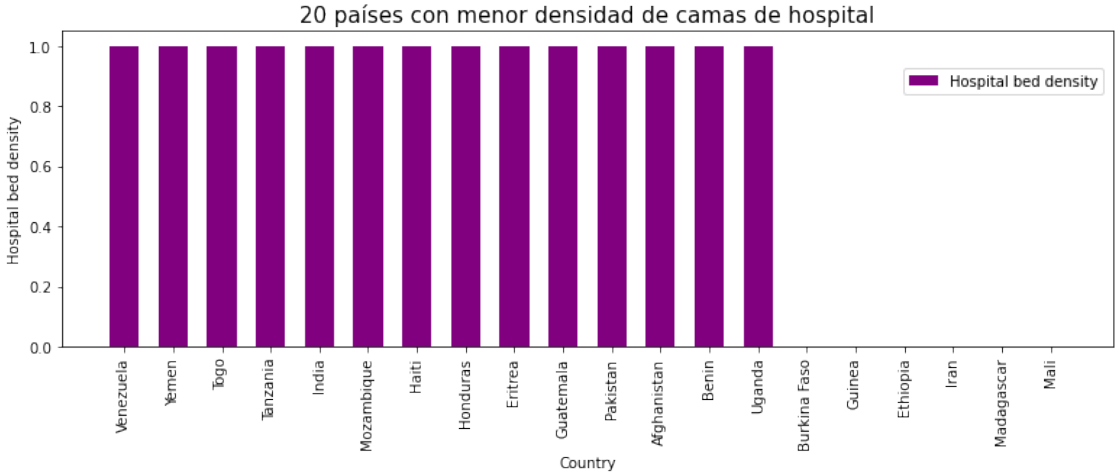
[13]:
```
#Los 50 países con menor densidad de camas de hospital
Last20_HB = datos_HB.tail(20)
Last20_HB
```

[13]:

	Country	Hospital bed density (beds/1,000 population)	Year
152	Venezuela	1	2014
153	Yemen	1	2014

154	Togo	1	2011
155	Tanzania	1	2010
156	India	1	2011
157	Mozambique	1	2011
158	Haiti	1	2013
159	Honduras	1	2014
160	Eritrea	1	2011
161	Guatemala	1	2014
162	Pakistan	1	2014
163	Afghanistan	1	2014
164	Benin	1	2010
165	Uganda	1	2010
166	Burkina Faso	0	2010
167	Guinea	0	2011
168	Ethiopia	0	2015
169	Iran	0	2014
170	Madagascar	0	2010
171	Mali	0	2010

[14]:
```
#Grafiquemos la tabla anterior
plt.figure(figsize=[13,4])
plt.bar(Last20_HB['Country'], Last20_HB['Hospital bed density (beds/1,000␣
↪population)'], width=0.6, color='purple', label='Hospital bed density')
plt.xlabel('Country')
plt.ylabel('Hospital bed density')
#plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
↪color = 'blue', label="Moda")
plt.title("20 países con menor densidad de camas de hospital", fontsize=15)
plt.xticks(fontsize=10, rotation='vertical')
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
plt.show()
```



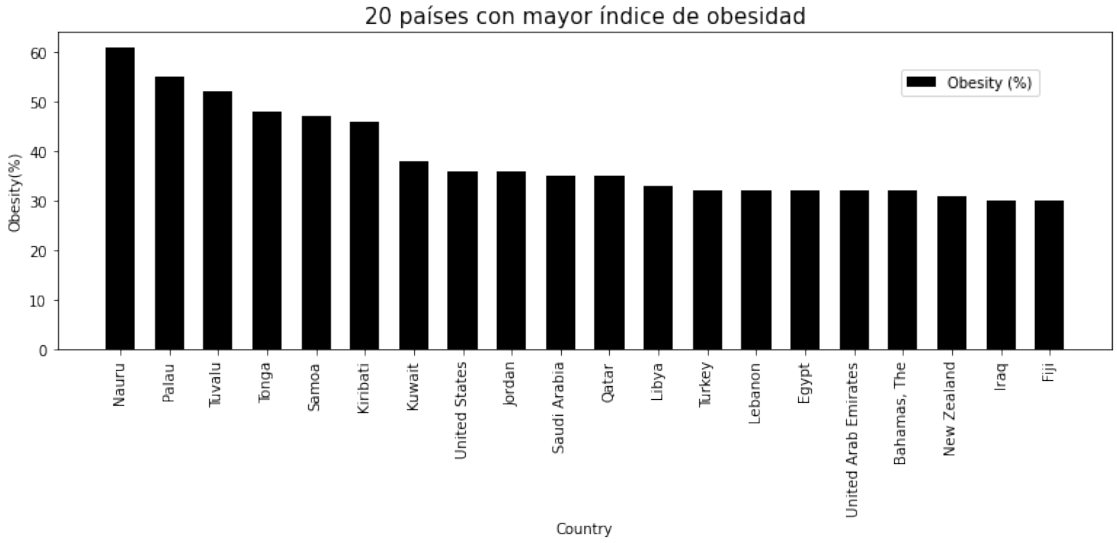
1.2.8 3. Los 20 países con mayor indice de obesidad

[15]:
```
#Los 20 países con mayor indice de obesidad
First20_Ob = datos_Ob.head(20)
First20_Ob
```

[15]:

	Country	Obesity - adult prevalence rate (%)	Year
0	Nauru	61	2016
1	Palau	55	2016
2	Tuvalu	52	2016
3	Tonga	48	2016
4	Samoa	47	2016
5	Kiribati	46	2016
6	Kuwait	38	2016
7	United States	36	2016
8	Jordan	36	2016
9	Saudi Arabia	35	2016
10	Qatar	35	2016
11	Libya	33	2016
12	Turkey	32	2016
13	Lebanon	32	2016
14	Egypt	32	2016
15	United Arab Emirates	32	2016
16	Bahamas, The	32	2016
17	New Zealand	31	2016
18	Iraq	30	2016
19	Fiji	30	2016

[16]:
```
#Grafiquemos la tabla anterior
plt.figure(figsize=[13,4])
plt.bar(First20_Ob['Country'], First20_Ob['Obesity - adult prevalence rate␣
↪(%)'], width=0.6, color='black', label= 'Obesity (%)')
plt.xlabel('Country')
plt.ylabel('Obesity(%)')
#plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
↪color = 'blue', label="Moda")
plt.title("20 países con mayor índice de obesidad", fontsize=15)
plt.xticks(fontsize=10, rotation='vertical')
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
plt.show()
```



[17]:
```
datos_Ob.columns
```

[17]:
```
Index(['Country', 'Obesity - adult prevalence rate (%)', 'Year'],
dtype='object')
```

Los 20 países con menor índice de obesidad

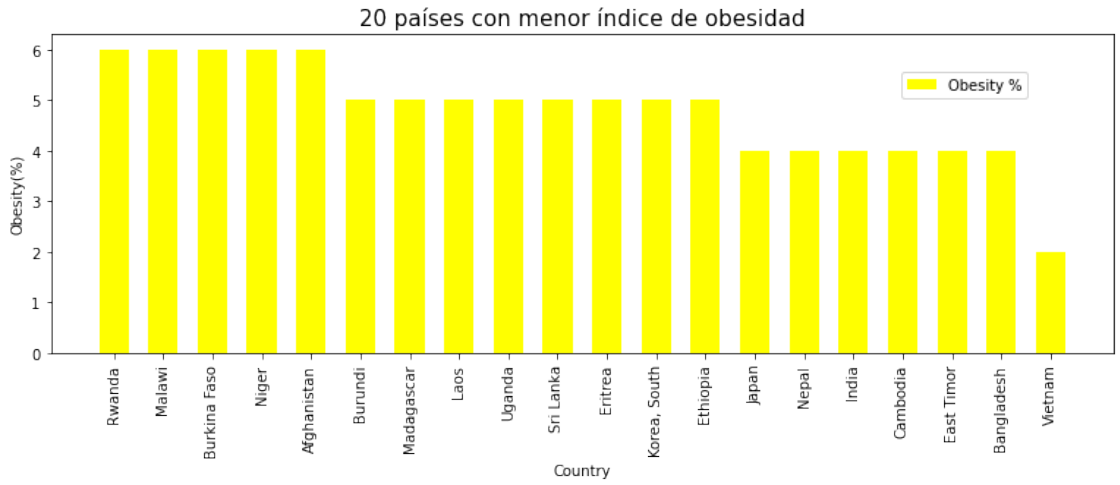
[18]:
```
#Los 20 países con menor indice de obesidad
Last20_Ob = datos_Ob.tail(20)
Last20_Ob
```

[18]:

	Country	Obesity - adult prevalence rate (%)	Year
165	Rwanda	6	2016
166	Malawi	6	2016
167	Burkina Faso	6	2016
168	Niger	6	2016
169	Afghanistan	6	2016
170	Burundi	5	2016
171	Madagascar	5	2016
172	Laos	5	2016
173	Uganda	5	2016
174	Sri Lanka	5	2016
175	Eritrea	5	2016
176	Korea, South	5	2016
177	Ethiopia	5	2016
178	Japan	4	2016
179	Nepal	4	2016
180	India	4	2016
181	Cambodia	4	2016

```
182    East Timor                                    4  2016
183    Bangladesh                                    4  2016
184       Vietnam                                    2  2016
```

[19]:
```
#Plot_Ob2 = Last20_Ob.plot(x='Country', y='Obesity - adult prevalence rate␣
 ↪(%)', kind='bar', legend=True)
#Plot_Ob2.set_xlabel("País")
#Plot_Ob2.set_ylabel("20 países con menor índice de obesidad")

#Grafiquemos la tabla anterior
plt.figure(figsize=[13,4])
plt.bar(Last20_Ob['Country'], Last20_Ob['Obesity - adult prevalence rate (%)'],␣
 ↪width=0.6, color='yellow', label='Obesity %')
plt.xlabel('Country')
plt.ylabel('Obesity(%)')
#plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'blue', label="Moda")
plt.title("20 países con menor índice de obesidad", fontsize=15)
plt.xticks(fontsize=10, rotation='vertical')
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)

plt.show()
```



[54]:
```
datos_HB
```

[54]:
```
          Country  Hospital bed density (beds/1,000 population)  Year
0          Monaco                                            14  2012
1           Japan                                            13  2012
2    Korea, North                                            13  2012
3    Korea, South                                            12  2015
```

```
4          Belarus                                                11  2013
..             …                                              …   …
167         Guinea                                                 0  2011
168       Ethiopia                                                 0  2015
169           Iran                                                 0  2014
170     Madagascar                                                 0  2010
171           Mali                                                 0  2010

[172 rows x 3 columns]
```

1.2.9 Promedio de la tasa de muerte en países con densidad de camas menor a 5 camas/1000 habitantes

[55]:
```
#Seleccionamos aquellos países cuya densidad de camas de hospital menor a 5
datos_HB.loc[datos_HB['Hospital bed density (beds/1,000 population)'] < 5]
```

[55]:
```
         Country  Hospital bed density (beds/1,000 population)  Year
45     Macedonia                                              4  2013
46       Finland                                              4  2015
47        Greece                                              4  2015
48         China                                              4  2012
49       Armenia                                              4  2015
..           …                                              …   …
167       Guinea                                              0  2011
168     Ethiopia                                              0  2015
169         Iran                                              0  2014
170   Madagascar                                              0  2010
171         Mali                                              0  2010

[127 rows x 3 columns]
```

[56]:
```
#HB_DR = pd.merge(datos_DR, datos_HB), 'inner' utiliza la intersección de ambos␣
↪frames.
#Combined = datos_DR.merge(datos_HB, 'inner')
Combined = pd.merge(left=datos_DR, right=datos_HB, left_on='Country',␣
↪right_on='Country')
Combined
```

[56]:
```
                  Country  Death rate (deaths/1,000 population)  Year_x  \
0               Lithuania                                    15    2018
1                  Latvia                                    15    2018
2                Bulgaria                                    15    2018
3                 Ukraine                                    14    2018
4                  Serbia                                    14    2018
..                    …                                    …     …
167          Saudi Arabia                                     3    2018
```

```
168              Bahrain                                          3    2018
169               Kuwait                                          2    2018
170  United Arab Emirates                                         2    2018
171                 Qatar                                         2    2018

     Hospital bed density (beds/1,000 population)  Year_y
0                                                7    2013
1                                                6    2013
2                                                7    2013
3                                                9    2013
4                                                6    2012
..                                             ...     ...
167                                              3    2014
168                                              2    2014
169                                              2    2014
170                                              1    2013
171                                              1    2014

[172 rows x 5 columns]
```

[57]:
```
Combined_average = Combined.loc[Combined['Hospital bed density (beds/1,000␣
↪population)']<5 ]
Combined_average
```

[57]:
```
                     Country  Death rate (deaths/1,000 population)  Year_x  \
7                  Afghanistan                                    13    2018
8    Central African Republic                                     13    2018
15                     Zambia                                     12    2018
17                 Mozambique                                     11    2018
18                     Greece                                     11    2018
..                        ...                                    ...     ...
167              Saudi Arabia                                      3    2018
168                   Bahrain                                      3    2018
169                    Kuwait                                      2    2018
170      United Arab Emirates                                      2    2018
171                     Qatar                                      2    2018

     Hospital bed density (beds/1,000 population)  Year_y
7                                                1    2014
8                                                1    2011
15                                               2    2010
17                                               1    2011
18                                               4    2015
..                                             ...     ...
167                                              3    2014
168                                              2    2014
169                                              2    2014
```

```
170                                                 1    2013
171                                                 1    2014

[127 rows x 5 columns]
```

[58]:
```
#Promedio de tasa de muerte en países con densidad de camas menor a 5
#Promedio de Densidad de camas en países con densidad de camas menor a 5
Combined_average.mean()
```

[58]:
```
Death rate (deaths/1,000 population)              7.000000
Year_x                                         2018.000000
Hospital bed density (beds/1,000 population)      2.070866
Year_y                                         2012.763780
dtype: float64
```

1.2.10 ¿Cuál es el porcentaje de países cuya obesidad es mayor a 30%?

[59]:
```
datos_Ob.columns
```

[59]:
```
Index(['Country', 'Obesity - adult prevalence rate (%)', 'Year'],
dtype='object')
```

[60]:
```
Percentage = datos_Ob.loc[datos_Ob['Obesity - adult prevalence rate (%)']>30 ]
Percentage
```

[60]:

	Country	Obesity - adult prevalence rate (%)	Year
0	Nauru	61	2016
1	Palau	55	2016
2	Tuvalu	52	2016
3	Tonga	48	2016
4	Samoa	47	2016
5	Kiribati	46	2016
6	Kuwait	38	2016
7	United States	36	2016
8	Jordan	36	2016
9	Saudi Arabia	35	2016
10	Qatar	35	2016
11	Libya	33	2016
12	Turkey	32	2016
13	Lebanon	32	2016
14	Egypt	32	2016
15	United Arab Emirates	32	2016
16	Bahamas, The	32	2016
17	New Zealand	31	2016

[61]:
```
len(Percentage)
```

[61]: 18

[62]:
```
len(datos_Ob)
```

[62]: 185

[63]:
```
#Porcentaje de países con indice de obesidad mayor a 30%
Per_Ob = len(Percentage)*100/len(datos_Ob)
```

[64]:
```
print('El porcentaje de países con índice de obesidad mayor a 30% es:␣
↪',Per_Ob,'%' )
```

```
El porcentaje de países con índice de obesidad mayor a 30% es:  9.72972972972973
%
```

1.2.11 ¿Cuál es el porcentaje de países cuya saturación de camas es menor a 5%?

[65]:
```
datos_HB.columns
```

[65]:
```
Index(['Country', 'Hospital bed density (beds/1,000 population)', 'Year'],
dtype='object')
```

[66]:
```
Percentage2 = datos_HB.loc[datos_HB['Hospital bed density (beds/1,000␣
↪population)']<5 ]
```

[67]:
```
Percentage2
```

[67]:

	Country	Hospital bed density (beds/1,000 population)	Year
45	Macedonia	4	2013
46	Finland	4	2015
47	Greece	4	2015
48	China	4	2012
49	Armenia	4	2015
..	…	…	…
167	Guinea	0	2011
168	Ethiopia	0	2015
169	Iran	0	2014
170	Madagascar	0	2010
171	Mali	0	2010

[127 rows x 3 columns]

[68]:
```
len(Percentage2)
```

[68]: 127

[69]:
```
len(datos_HB)
```

[69]: 172

[70]:
```
#Porcentaje de países con camas disponibles menor a 5%
Per_HB = len(Percentage2)*100/len(datos_HB)
print('El porcentaje de países con camas disponibles menor a 5% es:␣
 ↪',Per_HB,'%' )
```

```
El porcentaje de países con camas disponibles menor a 5% es:  73.83720930232558
%
```

1.2.12 ¿Qué países tienen una taza de muerte mayor a 10 y un porcentaje de obesidad mayor a 10%?

[71]:
```
Combined2 = pd.merge(left=datos_DR, right=datos_Ob, left_on='Country',␣
 ↪right_on='Country')
Combined2
```

[71]:

	Country	Death rate (deaths/1,000 population)	Year_x	\
0	Lesotho	15	2018	
1	Lithuania	15	2018	
2	Latvia	15	2018	
3	Bulgaria	15	2018	
4	Ukraine	14	2018	
..	…	…	…	
180	Saudi Arabia	3	2018	
181	Bahrain	3	2018	
182	Kuwait	2	2018	
183	United Arab Emirates	2	2018	
184	Qatar	2	2018	

	Obesity - adult prevalence rate (%)	Year_y
0	17	2016
1	26	2016
2	24	2016
3	25	2016
4	24	2016
..	…	…
180	35	2016
181	30	2016
182	38	2016
183	32	2016
184	35	2016

[185 rows x 5 columns]

[72]:
```
Combined2.columns
```

[72]:
```
Index(['Country', 'Death rate (deaths/1,000 population)', 'Year_x',
       'Obesity - adult prevalence rate (%)', 'Year_y'],
      dtype='object')
```

[73]:
```
#Países que tienen una taza de muerte mayor a 10 y un porcentaje de obesidad␣
↪mayor a 10%?
Combined2[(Combined2['Death rate (deaths/1,000 population)'] > 10) &␣
↪(Combined2['Obesity - adult prevalence rate (%)']>10)]
```

[73]:

	Country	Death rate (deaths/1,000 population)	Year_x	\
0	Lesotho	15	2018	
1	Lithuania	15	2018	
2	Latvia	15	2018	
3	Bulgaria	15	2018	
4	Ukraine	14	2018	
5	Serbia	14	2018	
6	Russia	13	2018	
7	Belarus	13	2018	
10	Hungary	13	2018	
12	Estonia	13	2018	
13	Moldova	13	2018	
14	Croatia	12	2018	
15	Romania	12	2018	
17	Germany	12	2018	
20	Greece	11	2018	
21	Georgia	11	2018	
22	Swaziland	11	2018	
23	Portugal	11	2018	
24	Poland	11	2018	
25	Italy	11	2018	
26	Czech Republic	11	2018	

	Obesity - adult prevalence rate (%)	Year_y
0	17	2016
1	26	2016
2	24	2016
3	25	2016
4	24	2016
5	22	2016
6	23	2016
7	25	2016
10	26	2016
12	21	2016
13	19	2016
14	24	2016
15	23	2016
17	22	2016

```
20                                25    2016
21                                22    2016
22                                17    2016
23                                21    2016
24                                23    2016
25                                20    2016
26                                26    2016
```

1.2.13 ¿Cuál es el promedio de obesidad correspondiente a cada valor de taza de muerte?

[74]:
```
Combined2
```

[74]:
```
                  Country  Death rate (deaths/1,000 population)  Year_x  \
0                 Lesotho                                    15    2018
1               Lithuania                                    15    2018
2                  Latvia                                    15    2018
3                Bulgaria                                    15    2018
4                 Ukraine                                    14    2018
..                    …                                     …     …
180          Saudi Arabia                                     3    2018
181               Bahrain                                     3    2018
182                Kuwait                                     2    2018
183  United Arab Emirates                                     2    2018
184                 Qatar                                     2    2018

     Obesity - adult prevalence rate (%)  Year_y
0                                     17    2016
1                                     26    2016
2                                     24    2016
3                                     25    2016
4                                     24    2016
..                                   …     …
180                                   35    2016
181                                   30    2016
182                                   38    2016
183                                   32    2016
184                                   35    2016

[185 rows x 5 columns]
```

1.2.14 ¿Cuál es la moda de tasa de muertes de países en Asia

[75]:
```
#importamos la tabla correspondiente a tasa de muerte en Asia
html = requests.get('https://www.indexmundi.com/map/?t=0&v=26&r=as&l=en').
 ↪content
```

```
Asia_DR = pd.read_html('https://www.indexmundi.com/map/?t=0&v=26&r=as&l=en')
Asia_DR = Asia_DR[1]
Asia_DR.to_csv('DeathRate_Asia.csv')
Asia_DR
```

[75]:

	Country	Death rate (deaths/1,000 population)	Year
0	Russia	13	2018
1	Russia	13	2018
2	Afghanistan	13	2018
3	Georgia	11	2018
4	Japan	10	2018
5	Armenia	10	2018
6	Korea, North	9	2018
7	Kazakhstan	8	2018
8	Thailand	8	2018
9	China	8	2018
10	Hong Kong	8	2018
11	Taiwan	8	2018
12	Cambodia	7	2018
13	Burma	7	2018
14	India	7	2018
15	Laos	7	2018
16	Azerbaijan	7	2018
17	Indonesia	7	2018
18	Bhutan	6	2018
19	Kyrgyzstan	6	2018
20	Mongolia	6	2018
21	Pakistan	6	2018
22	Korea, South	6	2018
23	Sri Lanka	6	2018
24	Philippines	6	2018
25	Turkmenistan	6	2018
26	Turkey	6	2018
27	Tajikistan	6	2018
28	Vietnam	6	2018
29	Yemen	6	2018
30	East Timor	6	2018
31	Nepal	6	2018
32	Bangladesh	5	2018
33	Uzbekistan	5	2018
34	Iran	5	2018
35	Israel	5	2018
36	Malaysia	5	2018
37	Lebanon	5	2018
38	Macau	5	2018
39	Syria	4	2018
40	Iraq	4	2018

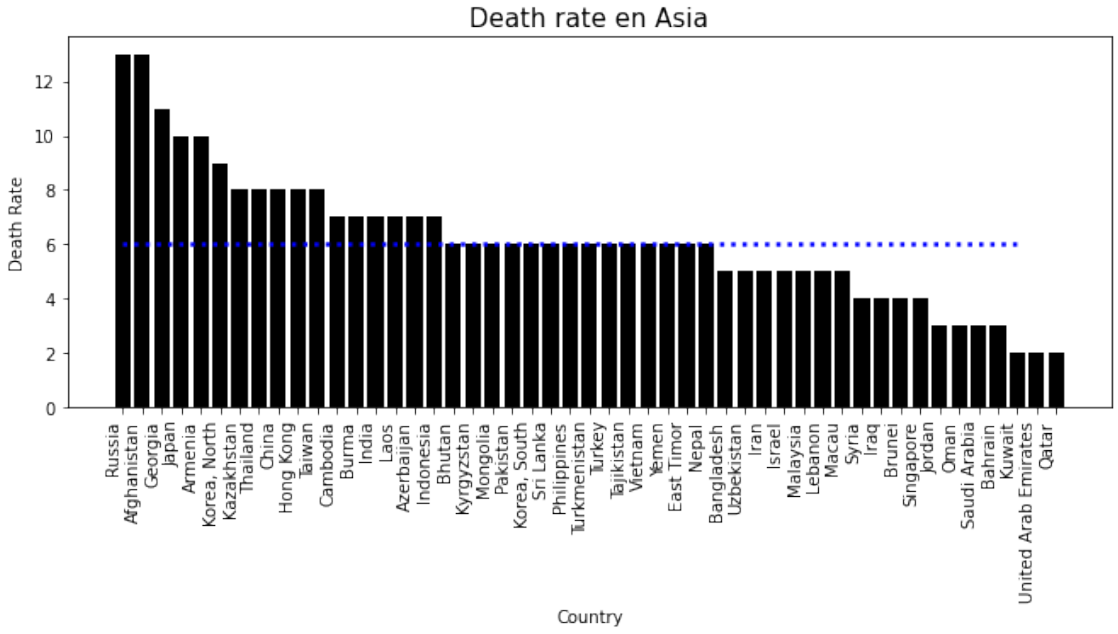
```
41                Brunei                                    4  2018
42             Singapore                                    4  2018
43                Jordan                                    3  2018
44                  Oman                                    3  2018
45          Saudi Arabia                                    3  2018
46               Bahrain                                    3  2018
47                Kuwait                                    2  2018
48  United Arab Emirates                                    2  2018
49                 Qatar                                    2  2018
```

[76]:
```
Asia_DR.columns
```

[76]:
```
Index(['Country', 'Death rate (deaths/1,000 population)', 'Year'],
dtype='object')
```

[77]:
```
#Ahora veamos la moda de tasa de muerte en Asia
Mode_Asia = Asia_DR['Death rate (deaths/1,000 population)'].mode()
```

[110]:
```
%matplotlib inline

plt.figure(figsize=[11,4])
plt.bar(Asia_DR['Country'], Asia_DR['Death rate (deaths/1,000 population)'],␣
 ↪width=0.8, color='black', label='DeathRate')
plt.xlabel('Country')
plt.ylabel('Death Rate')
plt.plot([0,46], [Mode_Asia,Mode_Asia], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'blue', label="Moda")
plt.title("Death rate en Asia", fontsize=15)
plt.setp(plt.gca().get_xticklabels(), rotation=90, horizontalalignment='right')
plt.show()
```



[78]:
```
print('La moda de tasa de muerte en países de Asia es: ', Mode_Asia)
```

```
La moda de tasa de muerte en países de Asia es:  0    6
dtype: int64
```

1.2.15 ¿Cuál es la moda de tasa de muertes de países en Europa?

[79]:
```
#importamos la tabla correspondiente a tasa de muerte en Asia
html = requests.get('https://www.indexmundi.com/map/?t=0&v=26&r=eu&l=en').
 ↪content
Europe_DR = pd.read_html('https://www.indexmundi.com/map/?t=0&v=26&r=eu&l=en')
Europe_DR = Europe_DR[1]
Europe_DR.to_csv('DeathRate_Europe.csv')
Europe_DR
```

[79]:

	Country	Death rate (deaths/1,000 population)	Year
0	Lithuania	15	2018
1	Bulgaria	15	2018
2	Latvia	15	2018
3	Ukraine	14	2018
4	Serbia	14	2018
5	Belarus	13	2018
6	Hungary	13	2018
7	Estonia	13	2018
8	Moldova	13	2018
9	Croatia	12	2018

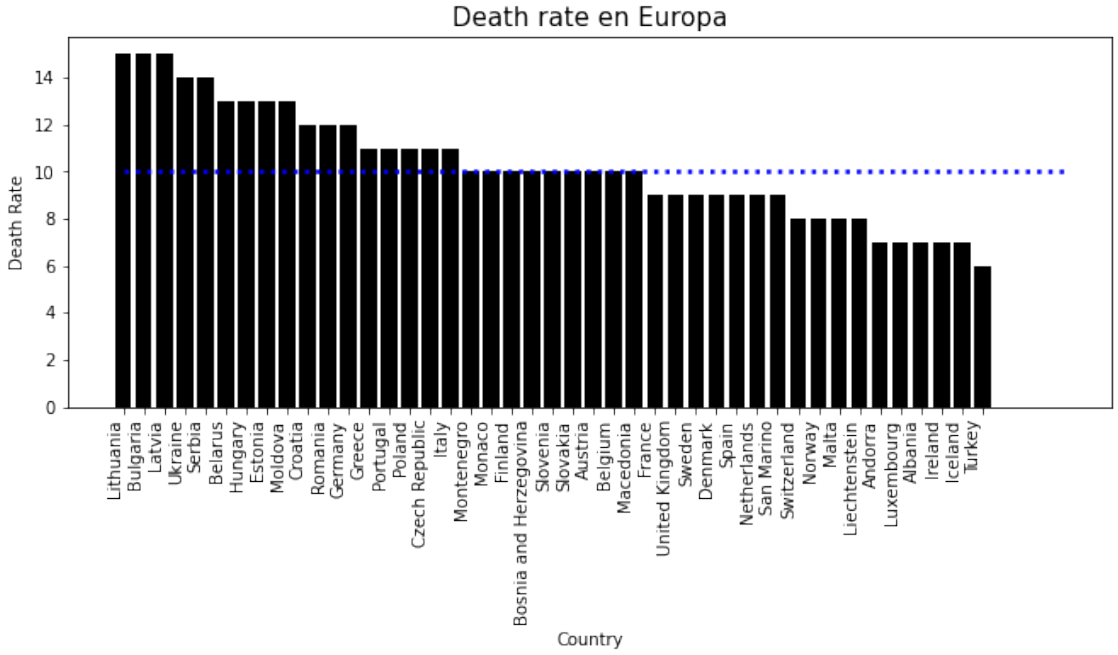
10	Romania	12	2018
11	Germany	12	2018
12	Greece	11	2018
13	Portugal	11	2018
14	Poland	11	2018
15	Czech Republic	11	2018
16	Italy	11	2018
17	Montenegro	10	2018
18	Monaco	10	2018
19	Finland	10	2018
20	Bosnia and Herzegovina	10	2018
21	Slovenia	10	2018
22	Slovakia	10	2018
23	Austria	10	2018
24	Belgium	10	2018
25	Macedonia	10	2018
26	France	9	2018
27	United Kingdom	9	2018
28	Sweden	9	2018
29	Denmark	9	2018
30	Spain	9	2018
31	Netherlands	9	2018
32	San Marino	9	2018
33	Switzerland	8	2018
34	Norway	8	2018
35	Malta	8	2018
36	Liechtenstein	8	2018
37	Andorra	7	2018
38	Luxembourg	7	2018
39	Albania	7	2018
40	Ireland	7	2018
41	Iceland	7	2018
42	Turkey	6	2018

[80]:
```
Mode_Europe = Europe_DR['Death rate (deaths/1,000 population)'].mode()
print('La moda de tasa de muerte en países de Europe es: ', Mode_Europe)
```

```
La moda de tasa de muerte en países de Europe es:  0    10
dtype: int64
```

[111]:
```
%matplotlib inline

plt.figure(figsize=[11,4])
plt.bar(Europe_DR['Country'], Europe_DR['Death rate (deaths/1,000␣
 ↪population)'], width=0.8, color='black', label='DeathRate')
plt.xlabel('Country')
plt.ylabel('Death Rate')
```

```
plt.plot([0,46], [Mode_Europe,Mode_Europe], linestyle='dotted', linewidth=2.5,␣
↪color = 'blue', label="Moda")
plt.title("Death rate en Europa", fontsize=15)
plt.setp(plt.gca().get_xticklabels(), rotation=90, horizontalalignment='right')
plt.show()
```



[81]:
```
#importamos la tabla correspondiente a tasa de muerte en centro-america y el␣
↪caribe
html = requests.get('https://www.indexmundi.com/map/?t=0&v=26&r=ca&l=en').
↪content
CentroAm_DR = pd.read_html('https://www.indexmundi.com/map/?t=0&v=26&r=ca&l=en')
CentroAm_DR = CentroAm_DR[1]
CentroAm_DR.to_csv('DeathRate_CentroAm_DR.csv')
CentroAm_DR
```

[81]:

	Country	Death rate (deaths/1,000 population)	\
0	Cuba	9	
1	Puerto Rico	9	
2	Trinidad and Tobago	9	
3	Barbados	9	
4	Grenada	8	
5	Dominica	8	
6	Saint Lucia	8	
7	Jamaica	8	
8	Haiti	8	

```
9   Saint Vincent and the Grenadines                                  7
10                      Bahamas, The                                  7
11              Saint Kitts and Nevis                                 7
12                 Dominican Republic                                 6
13                     Cayman Islands                                 6
14                        El Salvador                                 6
15                Antigua and Barbuda                                 6
16                           Honduras                                 5
17                          Nicaragua                                 5
18                             Panama                                 5
19                          Guatemala                                 5
20                         Costa Rica                                 5
21                             Belize                                 4

    Year
0   2018
1   2018
2   2018
3   2018
4   2018
5   2018
6   2018
7   2018
8   2018
9   2018
10  2018
11  2018
12  2018
13  2018
14  2018
15  2018
16  2018
17  2018
18  2018
19  2018
20  2018
21  2018
```

[82]:
```
#importamos la tabla correspondiente a tasa de muerte en NOrte America
html = requests.get('https://www.indexmundi.com/map/?t=0&v=26&r=na&l=en').
 ↪content
NorteAm_DR = pd.read_html('https://www.indexmundi.com/map/?t=0&v=26&r=na&l=en')
NorteAm_DR = NorteAm_DR[1]
NorteAm_DR.to_csv('DeathRate_NorteAm.csv')
NorteAm_DR
```

[82]:

	Country	Death rate (deaths/1,000 population)	Year
0	Canada	9	2018
1	Greenland	9	2018
2	United States	8	2018
3	Mexico	5	2018

[83]:
```
#importamos la tabla correspondiente a tasa de muerte en sudamerica
html = requests.get('https://www.indexmundi.com/map/?t=0&v=26&r=sa&l=en').
 ↪content
SudAm_DR = pd.read_html('https://www.indexmundi.com/map/?t=0&v=26&r=sa&l=en')
SudAm_DR = SudAm_DR[1]
SudAm_DR.to_csv('DeathRate_SudAm_DR.csv')
SudAm_DR
```

[83]:

	Country	Death rate (deaths/1,000 population)	Year
0	Uruguay	9	2018
1	Argentina	8	2018
2	Guyana	7	2018
3	Brazil	7	2018
4	Chile	6	2018
5	Bolivia	6	2018
6	Suriname	6	2018
7	Peru	6	2018
8	Colombia	6	2018
9	Venezuela	5	2018
10	Ecuador	5	2018
11	Falkland Islands (Islas Malvinas)	5	2012
12	Paraguay	5	2018

[84]:
```
#America = [NorteAm_DR, CentroAm_DR, SudAm_DR]
```

[85]:
```
America = pd.concat([CentroAm_DR,SudAm_DR, NorteAm_DR], ignore_index=True,␣
↪sort=True)
America
```

[85]:

	Country	Death rate (deaths/1,000 population)	\
0	Cuba	9	
1	Puerto Rico	9	
2	Trinidad and Tobago	9	
3	Barbados	9	
4	Grenada	8	
5	Dominica	8	
6	Saint Lucia	8	
7	Jamaica	8	
8	Haiti	8	
9	Saint Vincent and the Grenadines	7	
10	Bahamas, The	7	
11	Saint Kitts and Nevis	7	
12	Dominican Republic	6	
13	Cayman Islands	6	
14	El Salvador	6	
15	Antigua and Barbuda	6	
16	Honduras	5	
17	Nicaragua	5	
18	Panama	5	
19	Guatemala	5	
20	Costa Rica	5	
21	Belize	4	
22	Uruguay	9	
23	Argentina	8	
24	Guyana	7	
25	Brazil	7	
26	Chile	6	
27	Bolivia	6	
28	Suriname	6	
29	Peru	6	
30	Colombia	6	
31	Venezuela	5	
32	Ecuador	5	
33	Falkland Islands (Islas Malvinas)	5	
34	Paraguay	5	
35	Canada	9	
36	Greenland	9	
37	United States	8	
38	Mexico	5	

	Year
0	2018

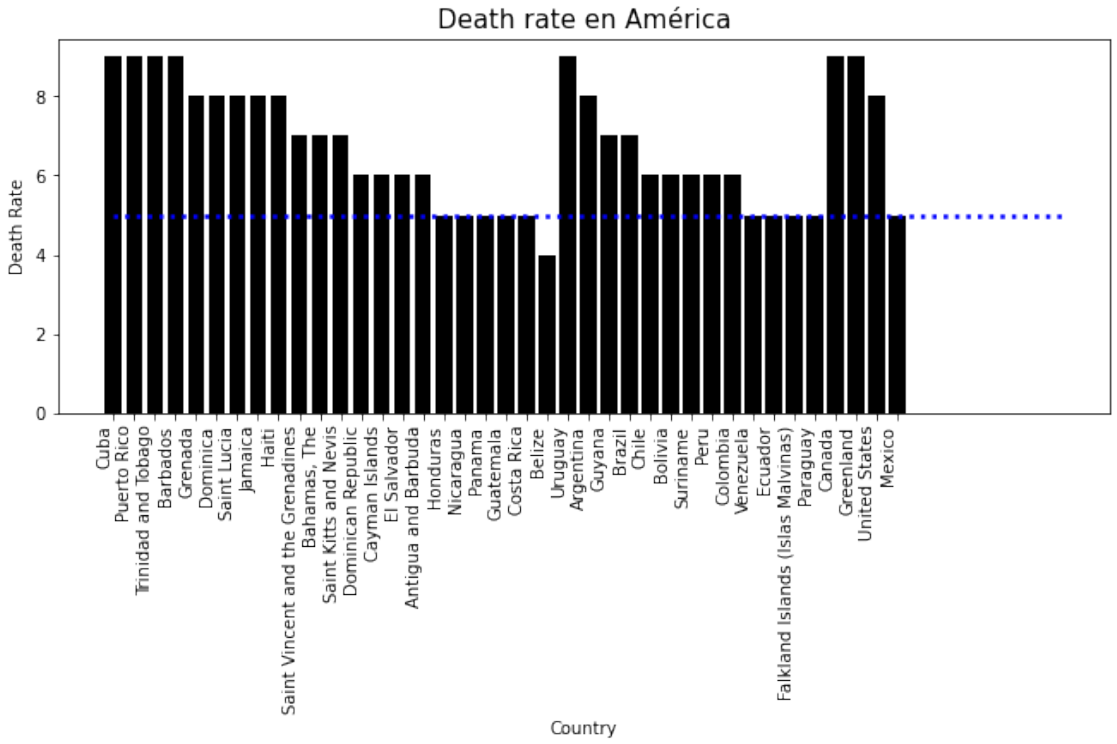
```
1   2018
2   2018
3   2018
4   2018
5   2018
6   2018
7   2018
8   2018
9   2018
10  2018
11  2018
12  2018
13  2018
14  2018
15  2018
16  2018
17  2018
18  2018
19  2018
20  2018
21  2018
22  2018
23  2018
24  2018
25  2018
26  2018
27  2018
28  2018
29  2018
30  2018
31  2018
32  2018
33  2012
34  2018
35  2018
36  2018
37  2018
38  2018
```

[86]:
```
Mode_America = America['Death rate (deaths/1,000 population)'].mode()
print('La moda de tasa de muerte en países de America es: ', Mode_America)
```

```
La moda de tasa de muerte en países de America es:  0    5
dtype: int64
```

[112]:
```
%matplotlib inline
```

```
plt.figure(figsize=[11,4])
plt.bar(America['Country'], America['Death rate (deaths/1,000 population)'],␣
 ↪width=0.8, color='black', label='DeathRate')
plt.xlabel('Country')
plt.ylabel('Death Rate')
plt.plot([0,46], [Mode_America,Mode_America], linestyle='dotted', linewidth=2.
 ↪5, color = 'blue', label="Moda")
plt.title("Death rate en América", fontsize=15)
plt.setp(plt.gca().get_xticklabels(), rotation=90, horizontalalignment='right')
plt.show()
```



[87]:
```
#Asia_DR.plot.bar(x='Country', y='Death rate (deaths/1,000 population)',␣
 ↪xlabel="Country", ylabel="Death Rate", color='r', figsize=(14, 6),␣
 ↪title='Tasa de muerte/1,000 hab. en Asia'  );
#America.plot.bar(x='Country', y='Death rate (deaths/1,000 population)',␣
 ↪xlabel="Country", ylabel="Death Rate", color='r', figsize=(14, 6),␣
 ↪title='Tasa de muerte/1,000 hab. en Asia'  );
As_Mean = Asia_DR.mean()
Eur_Mean = Europe_DR.mean()
Am_Mean = America.mean()
```

1.2.16 ¿Cuál es la moda de obesidad de países en Asia/Europa/America? (separado por continentes)

[88]:
```
#importamos la tabla correspondiente a el índice de obesidad en Asia
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2228&r=as&l=en').
 ↪content
Asia_Ob = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2228&r=as&l=en')
Asia_Ob = Asia_Ob[1]
Asia_Ob.to_csv('Asia_Ob.csv')
Asia_Ob
```

[88]:

	Country	Obesity - adult prevalence rate (%)	Year
0	Kuwait	38	2016
1	Jordan	36	2016
2	Saudi Arabia	35	2016
3	Qatar	35	2016
4	Turkey	32	2016
5	Lebanon	32	2016
6	United Arab Emirates	32	2016
7	Iraq	30	2016
8	Bahrain	30	2016
9	Syria	28	2016
10	Oman	27	2016
11	Israel	26	2016
12	Iran	26	2016
13	Russia	23	2016
14	Russia	23	2016
15	Georgia	22	2016
16	Kazakhstan	21	2016
17	Mongolia	21	2016
18	Armenia	20	2016
19	Azerbaijan	20	2016
20	Turkmenistan	19	2016
21	Yemen	17	2016
22	Uzbekistan	17	2016
23	Kyrgyzstan	17	2016
24	Malaysia	16	2016
25	Tajikistan	14	2016
26	Brunei	14	2016
27	Thailand	10	2016
28	Pakistan	9	2016
29	Indonesia	7	2016
30	Korea, North	7	2016
31	Philippines	6	2016
32	Bhutan	6	2016
33	China	6	2016
34	Singapore	6	2016

35	Burma	6	2016
36	Afghanistan	6	2016
37	Laos	5	2016
38	Sri Lanka	5	2016
39	Korea, South	5	2016
40	Japan	4	2016
41	Nepal	4	2016
42	India	4	2016
43	Cambodia	4	2016
44	East Timor	4	2016
45	Bangladesh	4	2016
46	Vietnam	2	2016

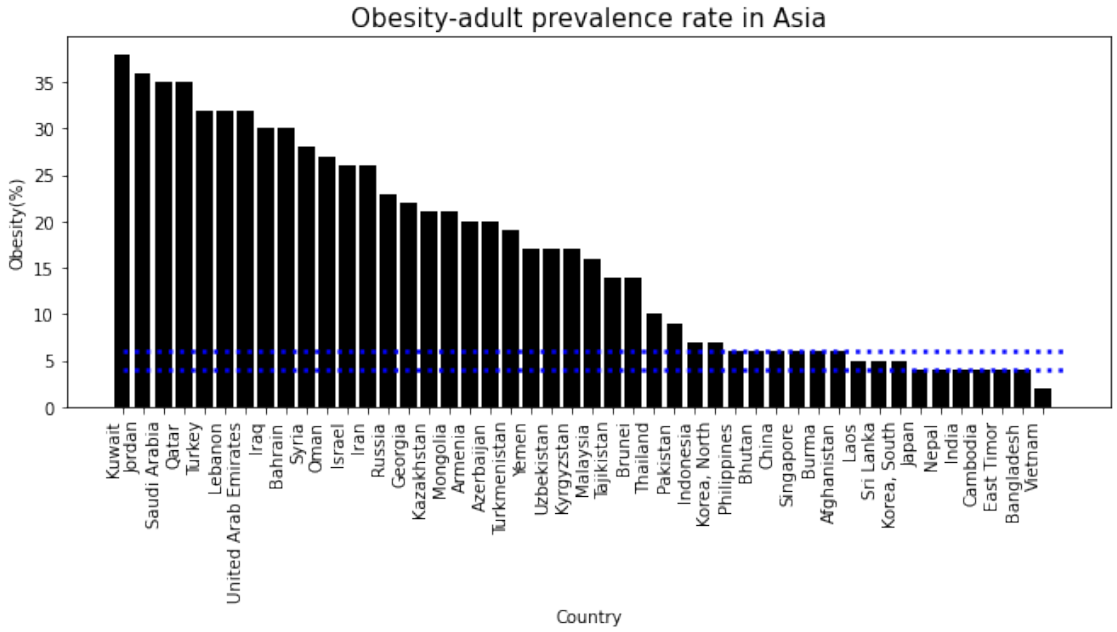
[89]:
```
Asia_Ob.columns
```

[89]:
```
Index(['Country', 'Obesity - adult prevalence rate (%)', 'Year'],
dtype='object')
```

[90]:
```
Mode_As_Ob = Asia_Ob['Obesity - adult prevalence rate (%)'].mode()
print('La moda de índice de obesidad en países Asiáticos es: ', Mode_As_Ob)
```

```
La moda de índice de obesidad en países Asiáticos es:  0    4
1    6
dtype: int64
```

[91]:
```
#Vamos a hacer una grafica tipo density, y resaltamos,  con una linea la moda
#Plot_Mode_As = Asia_Ob.plot(x='Country', y='Obesity - adult prevalence rate␣
 ↪(%)', kind='density', legend=True, color='red')
#Plot_Mode_As.set_xlabel('Country')
#Plot_Mode_As.set_ylabel('Obesity (%)')
#Plot_Mode_As.set_title('Obesity-adult prevalence rate in Asia', fontsize=15)
%matplotlib inline

plt.figure(figsize=[11,4])
plt.bar(Asia_Ob['Country'], Asia_Ob['Obesity - adult prevalence rate (%)'],␣
 ↪width=0.8, color='black', label='obesity')
plt.xlabel('Country')
plt.ylabel('Obesity(%)')
plt.plot([0,46], [Mode_As_Ob,Mode_As_Ob], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'blue', label="Moda")
plt.title("Obesity-adult prevalence rate in Asia", fontsize=15)
plt.setp(plt.gca().get_xticklabels(), rotation=90, horizontalalignment='right')
plt.show()
```



[92]:
```
#importamos la tabla correspondiente a el índice de obesidad en Europa
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2228&r=eu&l=en').
 ↪content
Eur_Ob = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2228&r=eu&l=en')
Eur_Ob = Eur_Ob[1]
Eur_Ob.to_csv('Eur_Ob.csv')
Eur_Ob
```

[92]:

	Country	Obesity - adult prevalence rate (%)	Year
0	Turkey	32	2016
1	Malta	29	2016
2	United Kingdom	28	2016
3	Hungary	26	2016
4	Lithuania	26	2016
5	Czech Republic	26	2016
6	Andorra	26	2016
7	Ireland	25	2016
8	Bulgaria	25	2016
9	Greece	25	2016
10	Belarus	25	2016
11	Croatia	24	2016
12	Ukraine	24	2016
13	Spain	24	2016
14	Latvia	24	2016
15	Montenegro	23	2016
16	Norway	23	2016

```
17                  Poland                                    23  2016
18              Luxembourg                                    23  2016
19                 Romania                                    23  2016
20              Macedonia                                     22  2016
21                 Germany                                    22  2016
22                 Finland                                    22  2016
23                 Belgium                                    22  2016
24                 Iceland                                    22  2016
25                 Albania                                    22  2016
26                  France                                    22  2016
27                  Serbia                                    22  2016
28                 Estonia                                    21  2016
29                Portugal                                    21  2016
30                  Sweden                                    21  2016
31                Slovakia                                    21  2016
32             Netherlands                                    20  2016
33                Slovenia                                    20  2016
34                 Austria                                    20  2016
35                   Italy                                    20  2016
36                 Denmark                                    20  2016
37             Switzerland                                    20  2016
38                 Moldova                                    19  2016
39  Bosnia and Herzegovina                                    18  2016
```

[93]:
```
Eur_Ob.columns
```

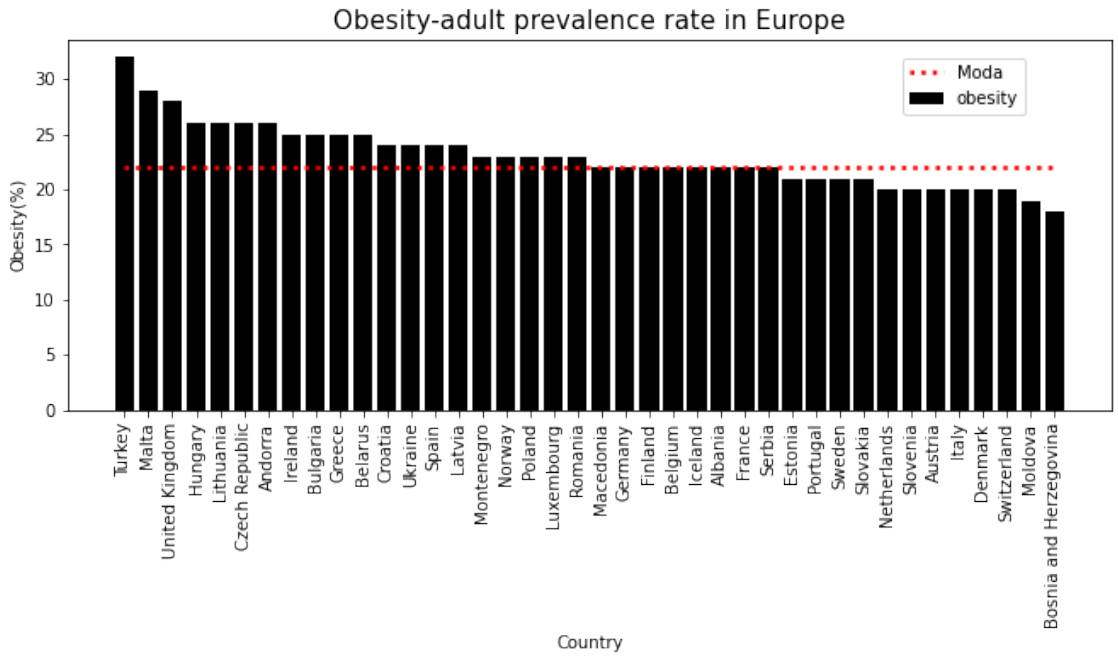
[93]:
```
Index(['Country', 'Obesity - adult prevalence rate (%)', 'Year'],
dtype='object')
```

[94]:
```
Mode_Eur_Ob = Eur_Ob['Obesity - adult prevalence rate (%)'].mode()
print('La moda de índice de obesidad en países Europeos es: ', Mode_Eur_Ob)
```

```
La moda de índice de obesidad en países Europeos es:  0    22
dtype: int64
```

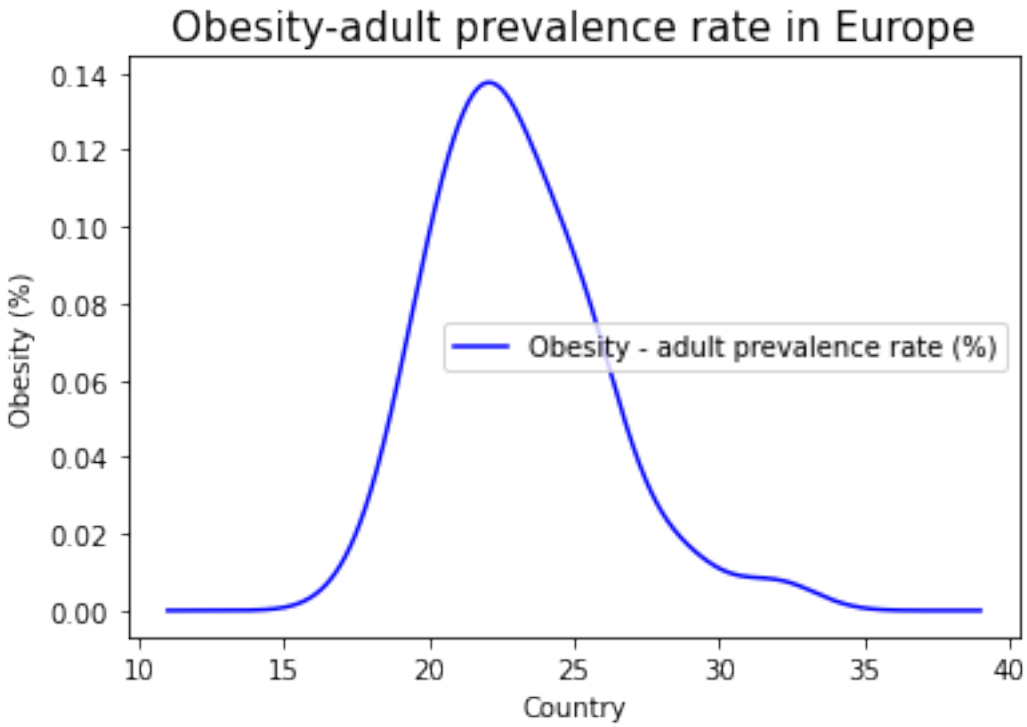
[95]:
```
%matplotlib inline

plt.figure(figsize=[11,4])
plt.bar(Eur_Ob['Country'], Eur_Ob['Obesity - adult prevalence rate (%)'],␣
 ↪width=0.8, color='black', label='obesity')
plt.xlabel('Country')
plt.ylabel('Obesity(%)')
plt.plot([0,39], [Mode_Eur_Ob, Mode_Eur_Ob], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'red', label="Moda")
plt.xticks(fontsize=10, rotation='vertical')
plt.title("Obesity-adult prevalence rate in Europe", fontsize=15)
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
```

```
plt.show()
```



[96]:
```
Plot_Mode_Eur = Eur_Ob.plot(x='Country', y='Obesity - adult prevalence rate␣
↪(%)', kind='density', legend=True, color='blue')
Plot_Mode_Eur.set_xlabel('Country')
Plot_Mode_Eur.set_ylabel('Obesity (%)')
Plot_Mode_Eur.set_title('Obesity-adult prevalence rate in Europe', fontsize=15)
```

[96]:
```
Text(0.5, 1.0, 'Obesity-adult prevalence rate in Europe')
```



[97]:
```
#importamos la tabla correspondiente a el índice de obesidad en Norte America
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2228&r=na&l=en').
 ↪content
NorAm_Ob = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2228&r=na&l=en')
NorAm_Ob = NorAm_Ob[1]
NorAm_Ob.to_csv('NorAm_Ob.csv')
NorAm_Ob
```

[97]:

	Country	Obesity - adult prevalence rate (%)	Year
0	United States	36	2016
1	Canada	29	2016
2	Mexico	29	2016

[98]:
```
#importamos la tabla correspondiente a el índice de obesidad en centro America
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2228&r=ca&l=en').
 ↪content
CenAm_Ob = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2228&r=ca&l=en')
CenAm_Ob = CenAm_Ob[1]
CenAm_Ob.to_csv('CenAm_Ob.csv')
CenAm_Ob
```

[98]:

	Country	Obesity - adult prevalence rate (%)	\
0	Bahamas, The	32	

```
1                          Dominica                          28
2                Dominican Republic                          28
3                        Costa Rica                          26
4                           Jamaica                          25
5                              Cuba                          25
6                       El Salvador                          25
7                            Belize                          24
8                         Nicaragua                          24
9   Saint Vincent and the Grenadines                          24
10                         Barbados                          23
11            Saint Kitts and Nevis                          23
12                           Panama                          23
13                            Haiti                          23
14                         Honduras                          21
15                          Grenada                          21
16                        Guatemala                          21
17                      Saint Lucia                          20
18              Antigua and Barbuda                          19
19              Trinidad and Tobago                          19

    Year
0   2016
1   2016
2   2016
3   2016
4   2016
5   2016
6   2016
7   2016
8   2016
9   2016
10  2016
11  2016
12  2016
13  2016
14  2016
15  2016
16  2016
17  2016
18  2016
19  2016
```

[99]:
```
#importamos la tabla correspondiente a el índice de obesidad en sud America
html = requests.get('https://www.indexmundi.com/map/?t=0&v=2228&r=sa&l=en').
 ↪content
SudAm_Ob = pd.read_html('https://www.indexmundi.com/map/?t=0&v=2228&r=sa&l=en')
SudAm_Ob = SudAm_Ob[1]
```

```
SudAm_Ob.to_csv('SudAm_Ob.csv')
SudAm_Ob
```

[99]:

	Country	Obesity - adult prevalence rate (%)	Year
0	Argentina	28	2016
1	Chile	28	2016
2	Uruguay	28	2016
3	Suriname	26	2016
4	Venezuela	26	2016
5	Colombia	22	2016
6	Brazil	22	2016
7	Paraguay	20	2016
8	Guyana	20	2016
9	Bolivia	20	2016
10	Ecuador	20	2016
11	Peru	20	2016

[100]:
```
Am_Obesity = pd.concat([NorAm_Ob,CenAm_Ob, SudAm_Ob], ignore_index=True,␣
↪sort=True)
Am_Obesity
```

[100]:

	Country	Obesity - adult prevalence rate (%)	\
0	United States	36	
1	Canada	29	
2	Mexico	29	
3	Bahamas, The	32	
4	Dominica	28	
5	Dominican Republic	28	
6	Costa Rica	26	
7	Jamaica	25	
8	Cuba	25	
9	El Salvador	25	
10	Belize	24	
11	Nicaragua	24	
12	Saint Vincent and the Grenadines	24	
13	Barbados	23	
14	Saint Kitts and Nevis	23	
15	Panama	23	
16	Haiti	23	
17	Honduras	21	
18	Grenada	21	
19	Guatemala	21	
20	Saint Lucia	20	
21	Antigua and Barbuda	19	
22	Trinidad and Tobago	19	
23	Argentina	28	
24	Chile	28	

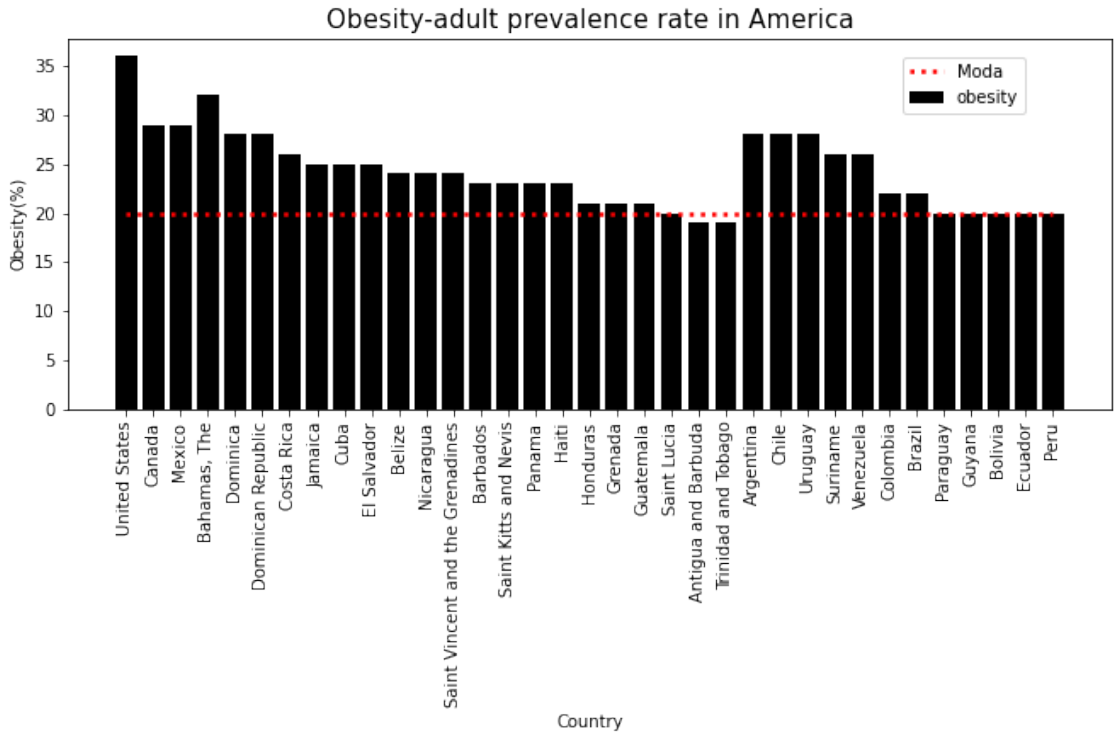
25	Uruguay	28
26	Suriname	26
27	Venezuela	26
28	Colombia	22
29	Brazil	22
30	Paraguay	20
31	Guyana	20
32	Bolivia	20
33	Ecuador	20
34	Peru	20

	Year
0	2016
1	2016
2	2016
3	2016
4	2016
5	2016
6	2016
7	2016
8	2016
9	2016
10	2016
11	2016
12	2016
13	2016
14	2016
15	2016
16	2016
17	2016
18	2016
19	2016
20	2016
21	2016
22	2016
23	2016
24	2016
25	2016
26	2016
27	2016
28	2016
29	2016
30	2016
31	2016
32	2016
33	2016
34	2016

[101]:
```
Mode_Am_Ob = Am_Obesity['Obesity - adult prevalence rate (%)'].mode()
print('La moda de índice de obesidad en América es: ', Mode_Am_Ob)
```

```
La moda de índice de obesidad en América es:  0    20
dtype: int64
```

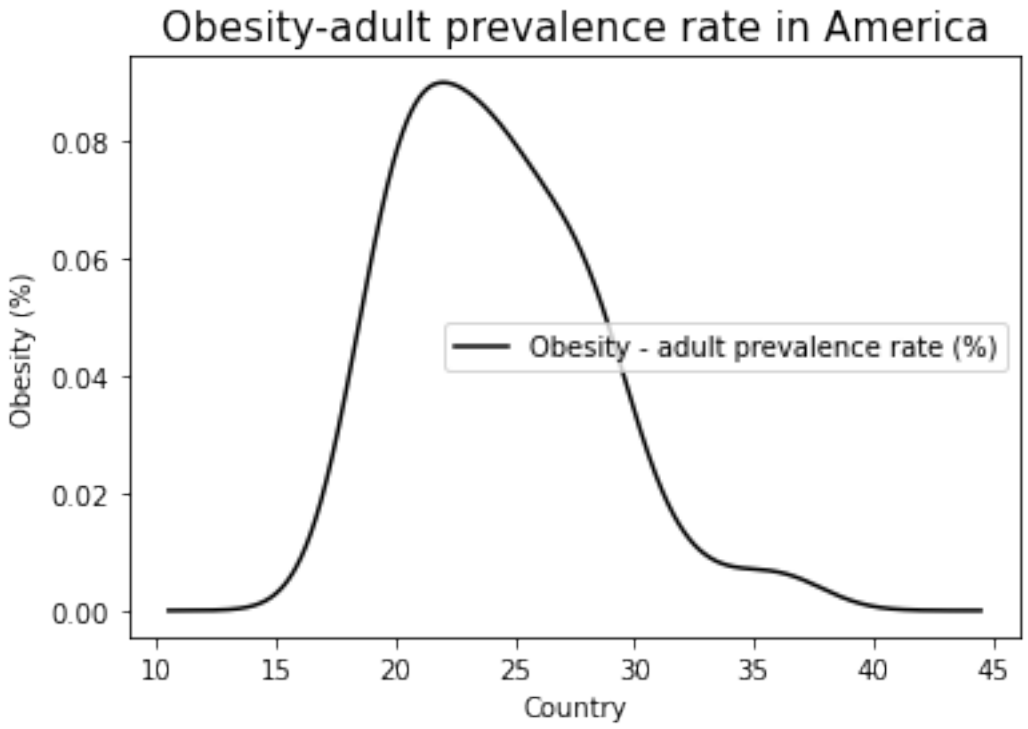
[102]:
```
%matplotlib inline

plt.figure(figsize=[11,4])
plt.bar(Am_Obesity['Country'], Am_Obesity['Obesity - adult prevalence rate␣
 ↪(%)'], width=0.8, color='black', label='obesity')
plt.xlabel('Country')
plt.ylabel('Obesity(%)')
plt.plot([0,34], [Mode_Am_Ob, Mode_Am_Ob], linestyle='dotted', linewidth=2.5,␣
 ↪color = 'red', label="Moda")
plt.xticks(fontsize=10, rotation='vertical')
plt.title("Obesity-adult prevalence rate in America", fontsize=15)
plt.legend(bbox_to_anchor=(0.8,0.8), loc='lower left', borderaxespad=0.0)
plt.show()
```



[103]:
```
Plot_Mode_Am = Am_Obesity.plot(x='Country', y='Obesity - adult prevalence rate␣
 ↪(%)', kind='density', legend=True, color='black')
Plot_Mode_Am.set_xlabel('Country')
```

```
Plot_Mode_Am.set_ylabel('Obesity (%)')
Plot_Mode_Am.set_title('Obesity-adult prevalence rate in America', fontsize=15)
```

[103]: Text(0.5, 1.0, 'Obesity-adult prevalence rate in America')



[69]:
```
datos_DR.columns
```

[69]: Index(['Country', 'Death rate (deaths/1,000 population)', 'Year'], dtype='object')

1.2.17 ¿Cuál es el promedio de obesidad correspondiente a cada valor de taza de muertes?

[70]:
```
#Definición de funciones para la resolución de la pregunta de promedios de␣
 ↪obesidad agrupados por taza de muerte

n = datos_DR['Death rate (deaths/1,000 population)'].max()
merged_inner = pd.merge(left=datos_DR, right=datos_Ob, left_on='Country',␣
 ↪right_on='Country')
merged_inner2 = pd.merge(left=datos_HB, right=datos_Ob, left_on='Country',␣
 ↪right_on='Country')
def Promedio_DR_obesity(merged_inner,datos_Ob,n,a_list):
    Rate = 'Death rate (deaths/1,000 population)'
```

```
    for i in range(n):
        A=merged_inner.loc[merged_inner['Death rate (deaths/1,000 population)']␣
↪== n-i+1, ['Country', 'Death rate (deaths/1,000 population)']]
        merged_x = pd.merge(left=A, right=datos_Ob, left_on='Country',␣
↪right_on='Country')
        if np.isnan(merged_x['Obesity - adult prevalence rate (%)'].mean()):
            a_list[i] = 0
        else:
            a_list[i] = merged_x['Obesity - adult prevalence rate (%)'].mean()

    return a_list

def Promedio_DR_HBD(merged_inner,datos_HB,n,a_list):
    Rate = 'Death rate (deaths/1,000 population)'
    for i in range(n):
        A=merged_inner.loc[merged_inner['Death rate (deaths/1,000 population)']␣
↪ == n-i+1, ['Country', 'Death rate (deaths/1,000 population)']]
        merged_x = pd.merge(left=A, right=datos_HB, left_on='Country',␣
↪right_on='Country')
        if np.isnan(merged_x['Hospital bed density (beds/1,000 population)'].
↪mean()):
            a_list[i] = 0
        else:
            a_list[i] = merged_x['Hospital bed density (beds/1,000␣
↪population)'].mean()

    return a_list
```

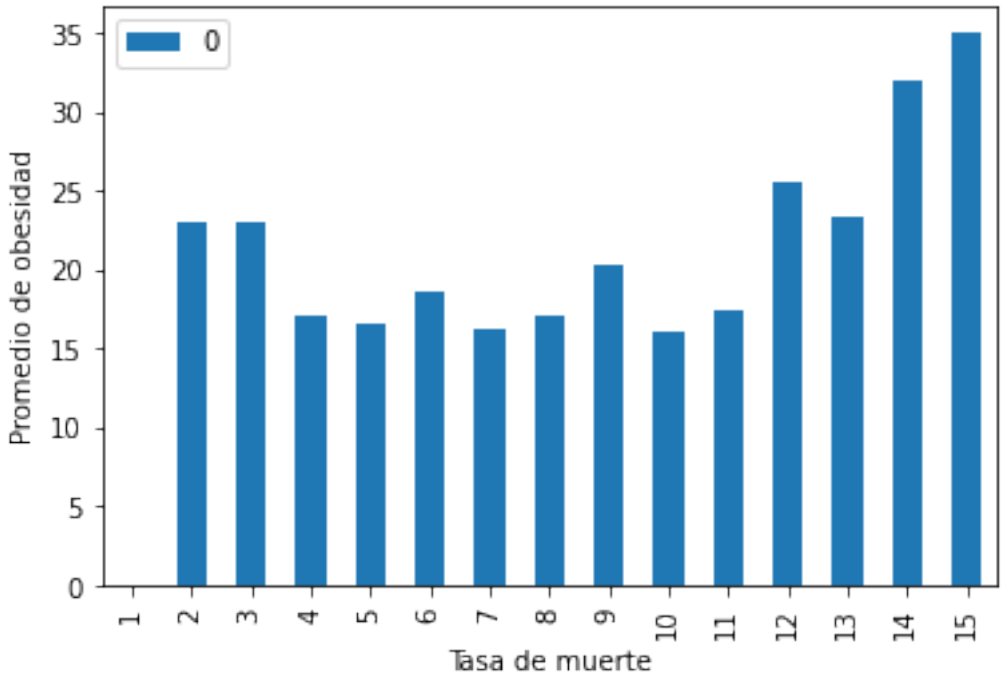
[181]:
```
Elegir = 1
Rate = 'Death rate (deaths/1,000 population)'
a_list = list(range(0, n))
n = datos_DR['Death rate (deaths/1,000 population)'].max()
if Elegir==1:

    promedio1 = pd.
↪DataFrame(Promedio_DR_obesity(merged_inner,datos_Ob,n,a_list),␣
↪list(range(1,n+1)))
    print('A continuación se muestran las tazas de muerte junto con sus␣
↪promedios de obesidad')
    print(promedio1)

elif Elegir==2:

    promedio2 = pd.DataFrame(Promedio_DR_HBD(merged_inner,datos_HB,n,a_list),␣
↪list(range(1,n+1)))
```

```
    print('A continuación se muestran las tazas de muerte junto con sus␣
↪promedios de camas/1000 habitantes')
    print(promedio2)
```

```
A continuación se muestran las tazas de muerte junto con sus promedios de
obesidad
            0
1    0.000000
2   23.000000
3   23.000000
4   17.000000
5   16.600000
6   18.555556
7   16.187500
8   17.095238
9   20.307692
10  16.133333
11  17.413793
12  25.473684
13  23.333333
14  32.000000
15  35.000000
```

[205]:
```
%matplotlib inline
# Creaemos una gráfica de barras
gf1= promedio1.plot(kind='bar')
gf1.set_xlabel("Tasa de muerte")
gf1.set_ylabel("Promedio de obesidad")
```

[205]:
```
Text(0, 0.5, 'Promedio de obesidad')
```



[202]:
```
Elegir = 2
Rate = 'Death rate (deaths/1,000 population)'
a_list = list(range(0, n))
n = datos_DR['Death rate (deaths/1,000 population)'].max()
if Elegir==1:

    promedio1 = pd.
 ↪DataFrame(Promedio_DR_obesity(merged_inner,datos_Ob,n,a_list),␣
 ↪list(range(1,n+1)))
    print('A continuación se muestran las tazas de muerte junto con sus␣
 ↪promedios de obesidad')
    print(promedio1)

elif Elegir==2:

    promedio2 = pd.DataFrame(Promedio_DR_HBD(merged_inner,datos_HB,n,a_list),␣
 ↪list(range(1,n+1)))
    print('A continuación se muestran las tazas de muerte junto con sus␣
 ↪promedios de camas/1000 habitantes')
    print(promedio2)
```

```
A continuación se muestran las tazas de muerte junto con sus promedios de
camas/1000 habitantes
           0
```

```
1    0.000000
2    6.666667
3    7.500000
4    6.000000
5    5.500000
6    3.750000
7    4.500000
8    3.470588
9    2.909091
10   2.379310
11   3.357143
12   1.722222
13   2.000000
14   2.000000
15   1.333333
```

[206]:
```
%matplotlib inline
# Creaemos una gráfica de barras
gf2= promedio2.plot(kind='bar')
gf2.set_xlabel("Tasa de muerte")
gf2.set_ylabel("Promedio camas por 100mil habitantes")
```

[206]: Text(0, 0.5, 'Promedio camas por 100mil habitantes')