PUBLIC HEALTH AWARENESS CAMPAIGN

Abstract:

The right to health includes a right of access to good quality palliative care, but inequalities persist.

Objective:

Raising awareness is a key plank of the public health approach to palliative care, but involves consideration of subjects most of us prefer not to address.

Background:

The evidence shows that public awareness campaigns can improve awareness of palliative care and probably improve quality of care, but there is a lack of evidence about the latter.

Methods:

Rapid review and synthesis.

Results:

A comprehensive public awareness campaign about palliative care (including advance care planning and end-of-life decision making) should be based on clear and shared terminology, use well piloted materials, and the full range of mass media to suit different ages, cultures, and religious/spiritual perspectives.

Discussion:

Campaigns should be located within the framework of public health promotion and the synergy between short national mass media campaigns and longer term local community action initiatives carefully considered.
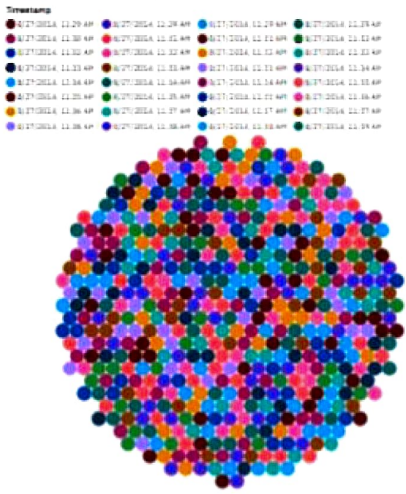
Tab 1

family_history for Country and state regions

family_history (Co...

Country colored by Timestamp

Timestamp

3. community initiatives about bereavement and grief.

```python
In [1]: import pandas as pd

In [2]: import numpy as np

In [3]: import seaborn as sns

In [4]: import matplotlib.pyplot as plt

In [12]: df= pd.read_csv(r'C:\Users\Machines\Downloads\survey.csv')
         print(df)
```

```
           Timestamp  Age  Gender         Country state self_employed  \
0     2014-08-27 11:29:31   37  Female   United States    IL          NaN
1     2014-08-27 11:29:37   44       M   United States    IN          NaN
2     2014-08-27 11:29:44   32    Male          Canada   NaN          NaN
3     2014-08-27 11:29:46   31    Male  United Kingdom   NaN          NaN
4     2014-08-27 11:30:22   31    Male   United States    TX          NaN
...                   ...  ...     ...             ...   ...          ...
1254  2015-09-12 11:17:21   26    male  United Kingdom   NaN           No
1255  2015-09-26 01:07:35   32    Male   United States    IL           No
1256  2015-11-07 12:36:58   34    male   United States    CA           No
1257  2015-11-30 21:25:06   46       f   United States    NC           No
1258  2016-02-01 23:04:31   25    Male   United States    IL           No

     family_history treatment work_interfere    no_employees  ...  \
0                No       Yes          Often            6-25  ...
1                No        No         Rarely  More than 1000  ...
2                No        No         Rarely            6-25  ...
3               Yes       Yes          Often          26-100  ...
4                No        No          Never         100-500  ...
...             ...       ...            ...             ...  ...
1254             No       Yes            NaN          26-100  ...
1255            Yes       Yes          Often          26-100  ...
1256            Yes       Yes      Sometimes  More than 1000  ...
1257             No        No            NaN         100-500  ...
1258            Yes       Yes      Sometimes          26-100  ...

                leave mental_health_consequence phys_health_consequence  \
0        Somewhat easy                        No                      No
1           Don't know                     Maybe                      No
2     Somewhat difficult                       No                      No
3     Somewhat difficult                      Yes                     Yes
4           Don't know                        No                      No
...                 ...                       ...                     ...
1254     Somewhat easy                        No                      No
1255  Somewhat difficult                       No                      No

          coworkers       supervisor mental_health_interview  \
0      Some of them             Yes                      No
1                No              No                      No
2               Yes             Yes                     Yes
3      Some of them              No                   Maybe
4      Some of them             Yes                     Yes
...             ...             ...                     ...
1254   Some of them    Some of them                      No
1255   Some of them             Yes                      No
1256             No              No                      No
1257             No              No                      No
1258   Some of them              No                      No

     phys_health_interview mental_vs_physical obs_consequence comments
0                    Maybe                Yes              No      NaN
1                       No         Don't know              No      NaN
2                      Yes                 No              No      NaN
3                    Maybe                 No             Yes      NaN
4                      Yes         Don't know              No      NaN
...                    ...                ...             ...      ...
1254                    No         Don't know              No      NaN
1255                    No                Yes              No      NaN
1256                    No                 No              No      NaN
1257                    No                 No              No      NaN
1258                    No         Don't know              No      NaN

[1259 rows x 27 columns]
```

```python
In [13]: df.head()
```

Out[13]:

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

5 rows × 27 columns

```
In [14]: #Processing Data
         #filling missing values
         df.fillna(0, inplace=True)
         print(df.head())

                    Timestamp  Age  Gender        Country state self_employed  \
         0  2014-08-27 11:29:31   37  Female  United States    IL             0
         1  2014-08-27 11:29:37   44       M  United States    IN             0
         2  2014-08-27 11:29:44   32    Male         Canada     0             0
         3  2014-08-27 11:29:46   31    Male  United Kingdom    0             0
         4  2014-08-27 11:30:22   31    Male  United States    TX             0

            family_history treatment work_interfere   no_employees  ... \
         0             No       Yes          Often            6-25  ...
         1             No        No         Rarely  More than 1000  ...
         2             No        No         Rarely            6-25  ...
         3            Yes       Yes          Often          26-100  ...
         4             No        No          Never         100-500  ...

                        leave mental_health_consequence phys_health_consequence  \
         0      Somewhat easy                        No                      No
         1         Don't know                     Maybe                      No
         2  Somewhat difficult                       No                      No
         3  Somewhat difficult                      Yes                     Yes
         4         Don't know                        No                      No

              coworkers supervisor mental_health_interview phys_health_interview  \
         0  Some of them       Yes                      No                 Maybe
         1            No        No                      No                    No
         2           Yes       Yes                     Yes                   Yes
         3  Some of them        No                   Maybe                 Maybe
         4  Some of them       Yes                     Yes                   Yes

            mental_vs_physical obs_consequence comments
         0               Yes              No         0
         1        Don't know              No         0
         2                No              No         0
         3                No             Yes         0
         4        Don't know              No         0

         [5 rows x 27 columns]


In [15]: df.head()

Out[15]:
```

```
[5 rows x 27 columns]
```

In [15]: df.head()

Out[15]:

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

5 rows × 27 columns

In [16]: #eliminating missing value
print(df.dropna())

```
              Timestamp  Age  Gender         Country state self_employed  \
0   2014-08-27 11:29:31   37  Female   United States    IL            0
1   2014-08-27 11:29:37   44       M   United States    IN            0
2   2014-08-27 11:29:44   32    Male          Canada     0            0
3   2014-08-27 11:29:46   31    Male  United Kingdom     0            0
4   2014-08-27 11:30:22   31    Male   United States    TX            0
...                 ...  ...     ...             ...   ...          ...
1254 2015-09-12 11:17:21  26    male  United Kingdom     0           No
1255 2015-09-26 01:07:35  32    Male   United States    IL           No
1256 2015-11-07 12:36:58  34    male   United States    CA           No
1257 2015-11-30 21:25:06  46       f   United States    NC           No
1258 2016-02-01 23:04:31  25    Male   United States    IL           No

     family_history treatment work_interfere    no_employees ...  \
0                No       Yes          Often            6-25 ...
1                No        No         Rarely  More than 1000 ...
2                No        No         Rarely            6-25 ...
3               Yes       Yes          Often          25-100 ...
4                No        No          Never         100-500 ...
...             ...       ...            ...             ... ...
1254             No       Yes              0          25-100 ...
1255            Yes       Yes          Often          25-100 ...
1256            Yes       Yes      Sometimes  More than 1000 ...
```

```
...              --          --          -          -- ---  ...
1255            Yes         Yes       Often       26-100  ...
1256            Yes         Yes   Sometimes  More than 1000 ...
1257             No          No           0      100-500  ...
1258            Yes         Yes   Sometimes       26-100  ...

                    leave mental_health_consequence phys_health_consequence  \
0           Somewhat easy                       No                      No
1              Don't know                    Maybe                      No
2      Somewhat difficult                       No                      No
3      Somewhat difficult                      Yes                     Yes
4              Don't know                       No                      No
...                   ...                      ...                     ...
1254        Somewhat easy                       No                      No
1255   Somewhat difficult                       No                      No
1256   Somewhat difficult                      Yes                     Yes
1257           Don't know                      Yes                      No
1258           Don't know                    Maybe                      No

          coworkers     supervisor mental_health_interview  \
0     Some of them            Yes                      No
1               No             No                      No
2              Yes            Yes                     Yes
3     Some of them             No                   Maybe
4     Some of them            Yes                     Yes
...            ...            ...                     ...
1254  Some of them   Some of them                      No
1255  Some of them            Yes                      No
1256            No             No                      No
1257            No             No                      No
1258  Some of them             No                      No

     phys_health_interview mental_vs_physical obs_consequence comments
0                    Maybe                Yes              No         0
1                       No         Don't know              No         0
2                      Yes                 No              No         0
3                    Maybe                 No             Yes         0
4                      Yes         Don't know              No         0
...                    ...                ...             ...       ...
1254                    No         Don't know              No         0
1255                    No                Yes              No         0
1256                    No                 No              No         0
1257                    No                 No              No         0
1258                    No         Don't know              No         0

[1259 rows x 27 columns]
```

Import necessary libraries

In [1]:

```python
#imports necessary libraries to do basic things on the dataset
import pandas as pd
import numpy as np

import seaborn as sns
import matplotlib.pyplot as plt


print('Successfully imported')
```
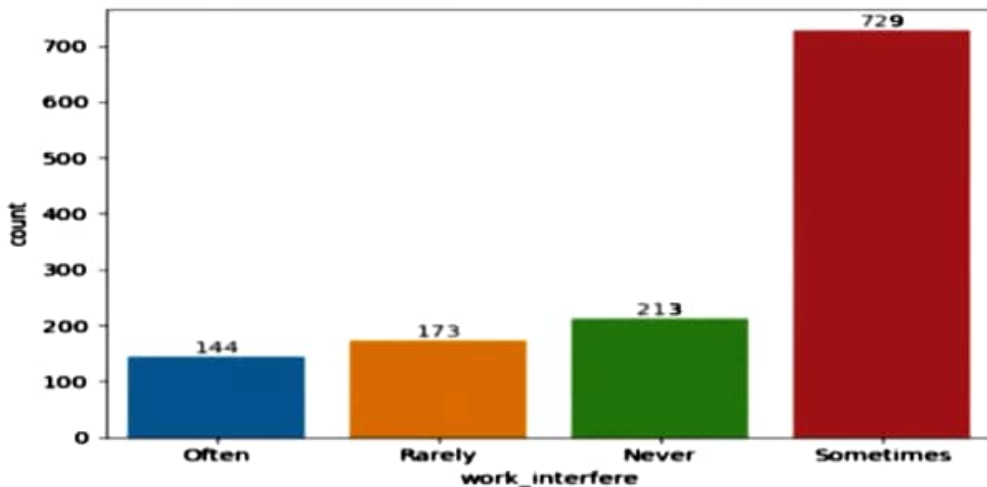
Successfully imported

In [6]:

```python
#Plot **work_interfere**
ax = sns.countplot(data = data , x = 'work_interfere');
#Add the value of each parametr on the Plot
ax.bar_label(ax.containers[0]);
```
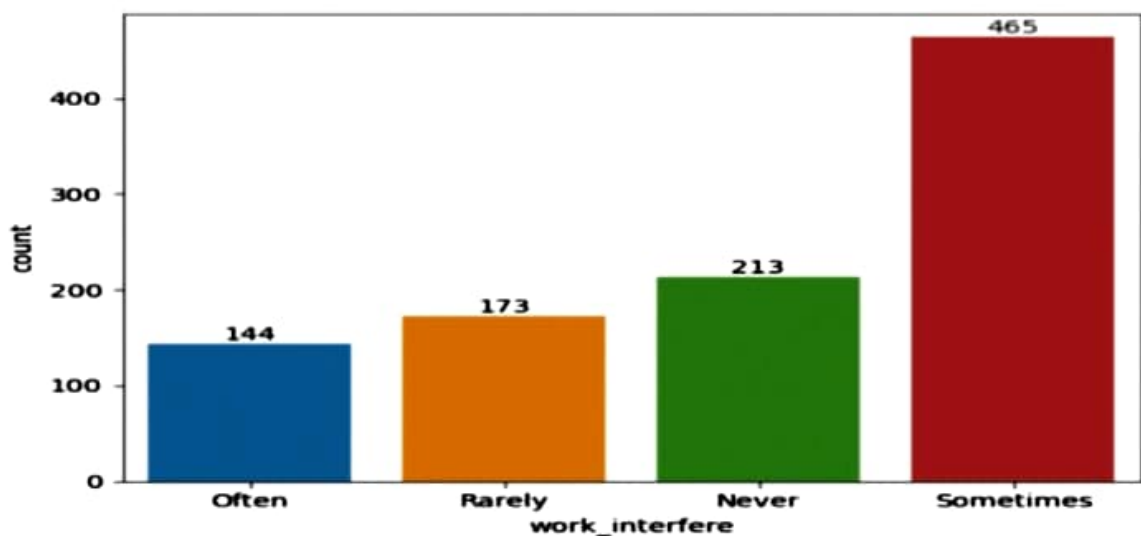
```python
ax = sns.countplot(data=data, x='work_
interfere');
ax.bar_label(ax.containers[0]);
```

```python
#correlation matrix
corrmat = train_df.corr()
f, ax = plt.subplots(figsize=(12, 9))
sns.heatmap(corrmat, vmax=.8, square=T
rue);
plt.show()


#treatment correlation matrix
k = 10 #number of variables for heatmap
cols = corrmat.nlargest(k, 'treatmen
t')['treatment'].index
cm = np.corrcoef(train_df[cols].value
s.T)
sns.set(font_scale=1.25)
hm = sns.heatmap(cm, cbar=True, annot=
True, square=True, fmt='.2f', annot_kw
s={'size': 10}, yticklabels=cols.value
s, xticklabels=cols.values)
plt.show()
```
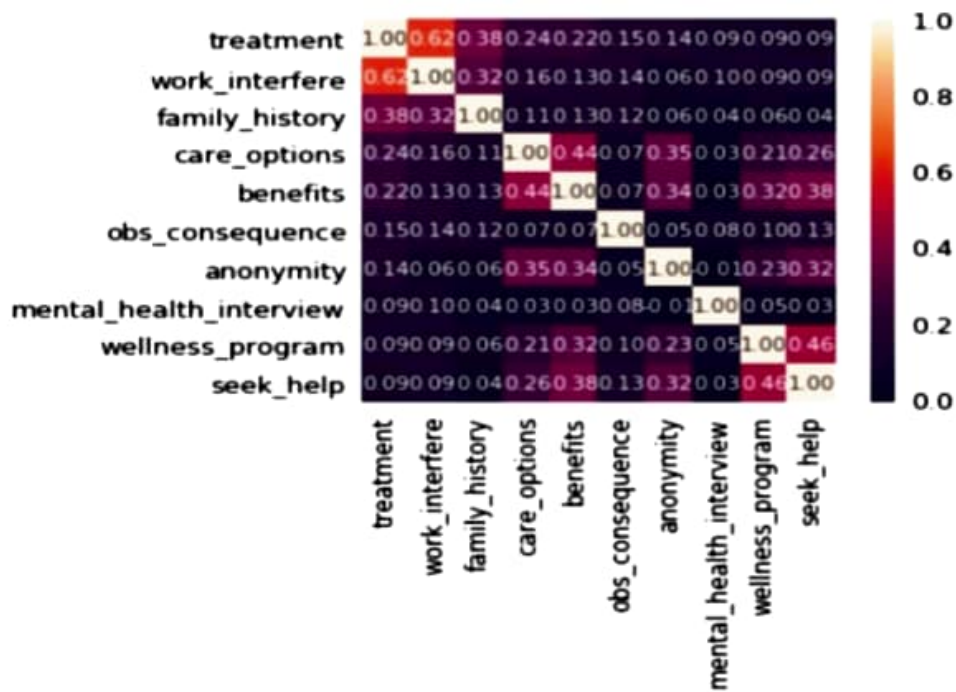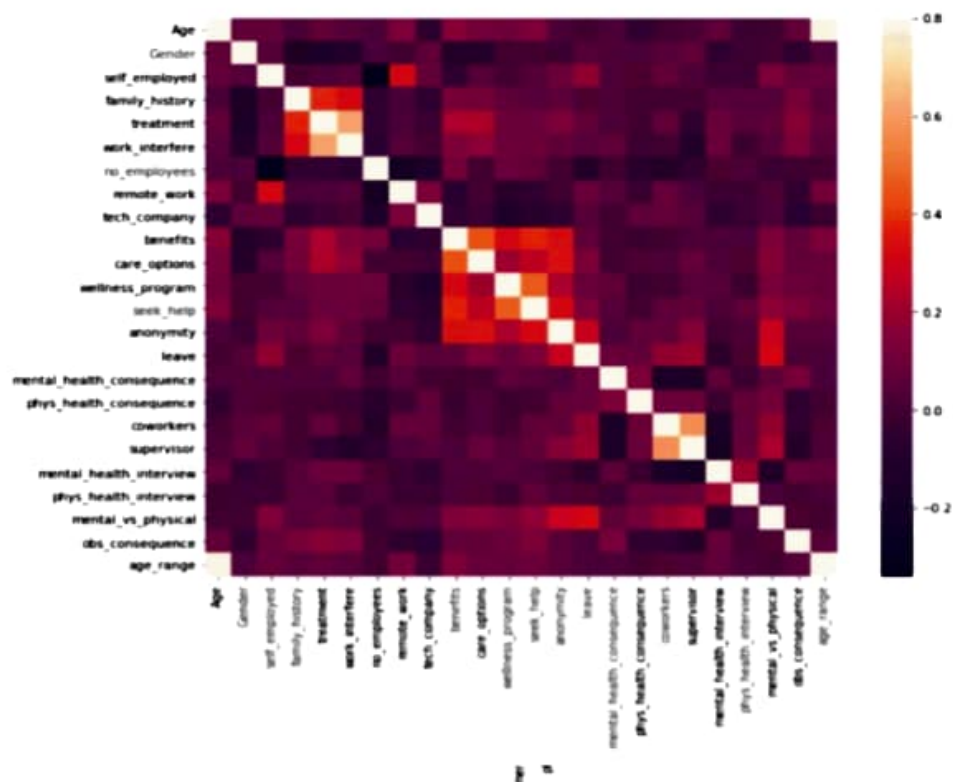
```python
# Distribiution and density by Age
plt.figure(figsize=(12,8))
sns.distplot(train_df["Age"], bins=24)
plt.title("Distribuition and density by Age")
plt.xlabel("Age")
```

```
Text(0.5,0,'Age')
```


Distribuition and density by Age
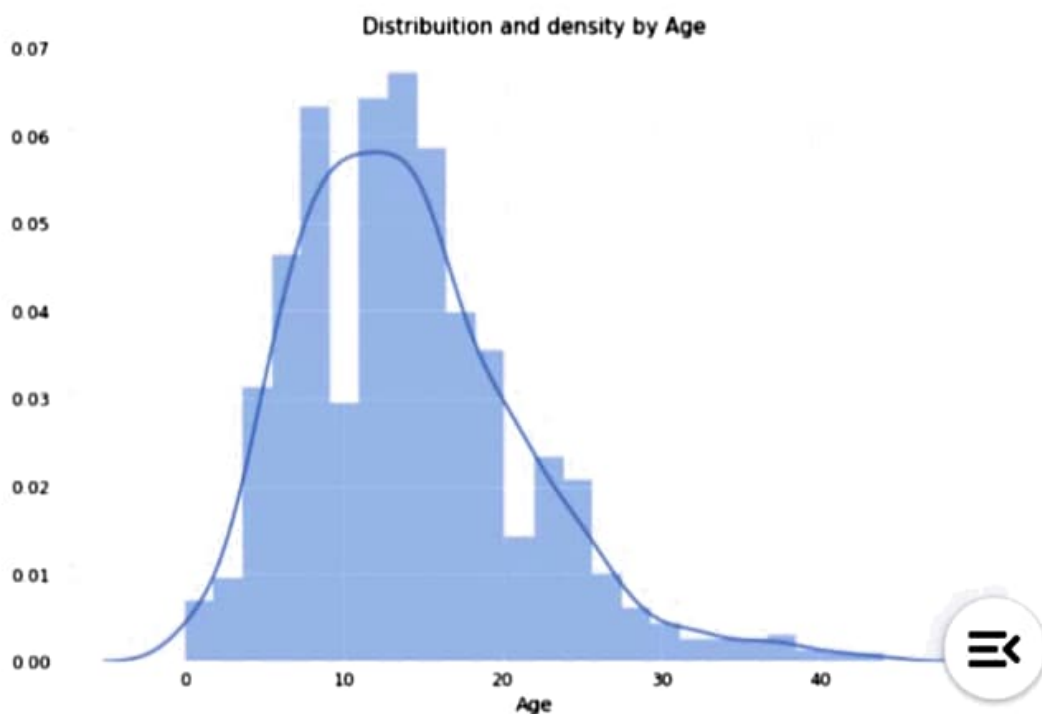
Separate by treatment or not

```python
g = sns.FacetGrid(train_df, col='treatment', size=5)
g = g.map(sns.distplot, "Age")
```
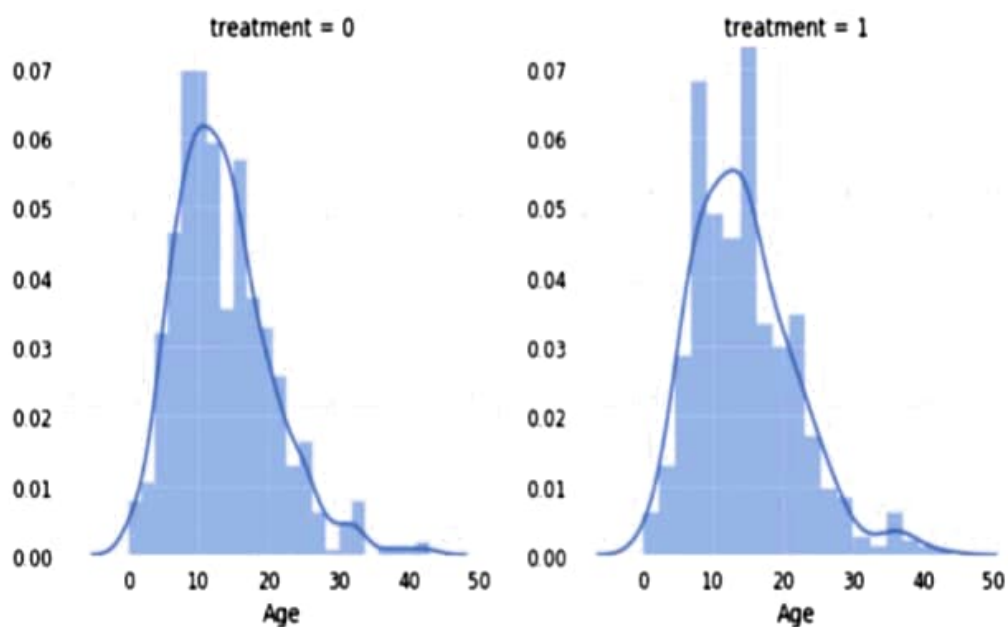
```python
# define X and y
feature_cols = ['Age', 'Gender', 'fami
ly_history', 'benefits', 'care_option
s', 'anonymity', 'leave', 'work_interf
ere']
X = train_df[feature_cols]
y = train_df.treatment

# split X and y into training and testi
ng sets
X_train, X_test, y_train, y_test = tra
in_test_split(X, y, test_size=0.30, ra
ndom_state=0)

# Create dictionaries for final graph
# Use: methodDict['Stacking'] = accurac
y_score
methodDict = {}
rmseDict = ()
```

Feature importances
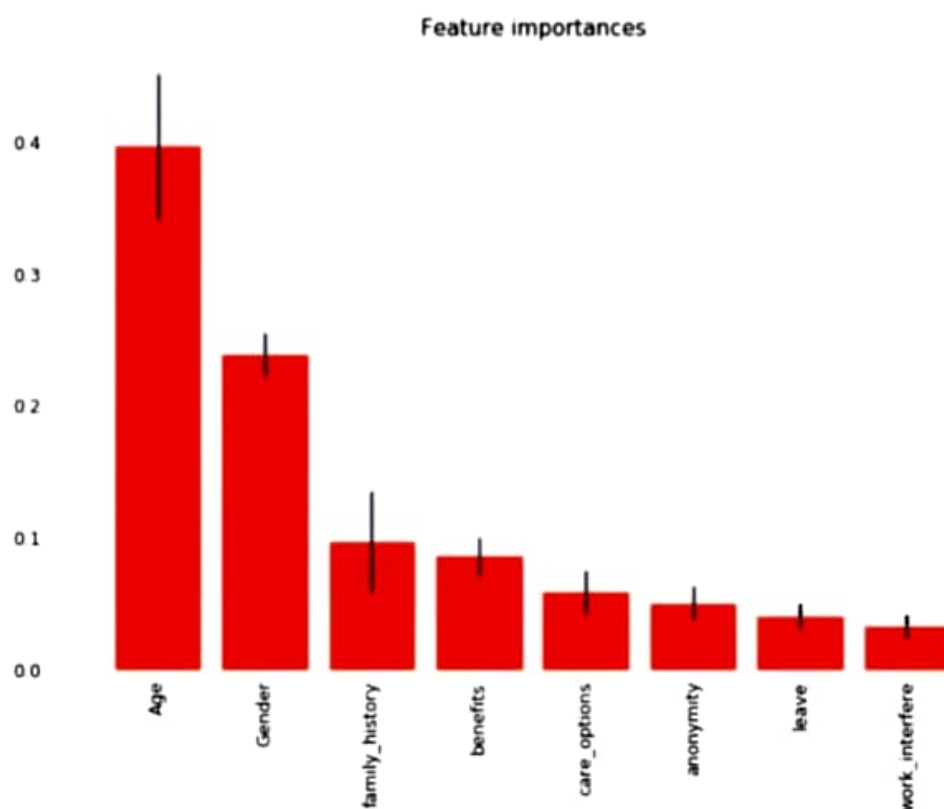
```python
#Let's see the Age distribution in this
dataset.
plt.figure(figsize = (10,6))
age_range_plot = sns.countplot(data =
data, x = 'Age');
age_range_plot.bar_label(age_range_plo
t.containers[0]);
plt.xticks(rotation=90);
```
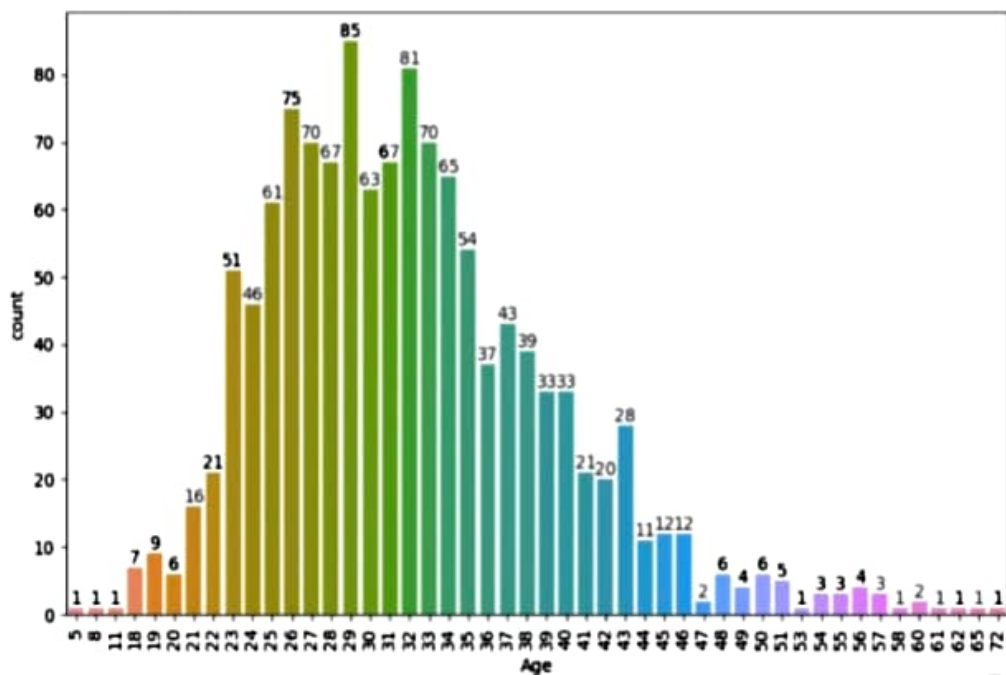
Conclusion

This review shows that public awareness campaigns can improve awareness of palliative care and probably improve quality of care, but there is a lack of evidence about the latter.

A comprehensive public awareness campaign about palliative care (including advance care planning and end-of-life decision making) should be based on clear and shared terminology, use of well piloted materials, and the full range of mass media to suit different ages, cultures, and religious/spiritual perspectives (e.g., print, radio, TV, web based, and social media).

Acknowledgments