People Health Awareness Campaign Analysis

Introduction

The People Health Awareness Campaign Analysis project aims to assess the effectiveness of a health awareness campaign in promoting mental health treatment. By analysing survey data, the project evaluates the campaign's impact on individuals' attitudes and decisions regarding mental health treatment.

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Data Understanding

The dataset contains survey responses related to mental health, including demographic information, employment status, family history, and factors influencing mental health treatment decisions.

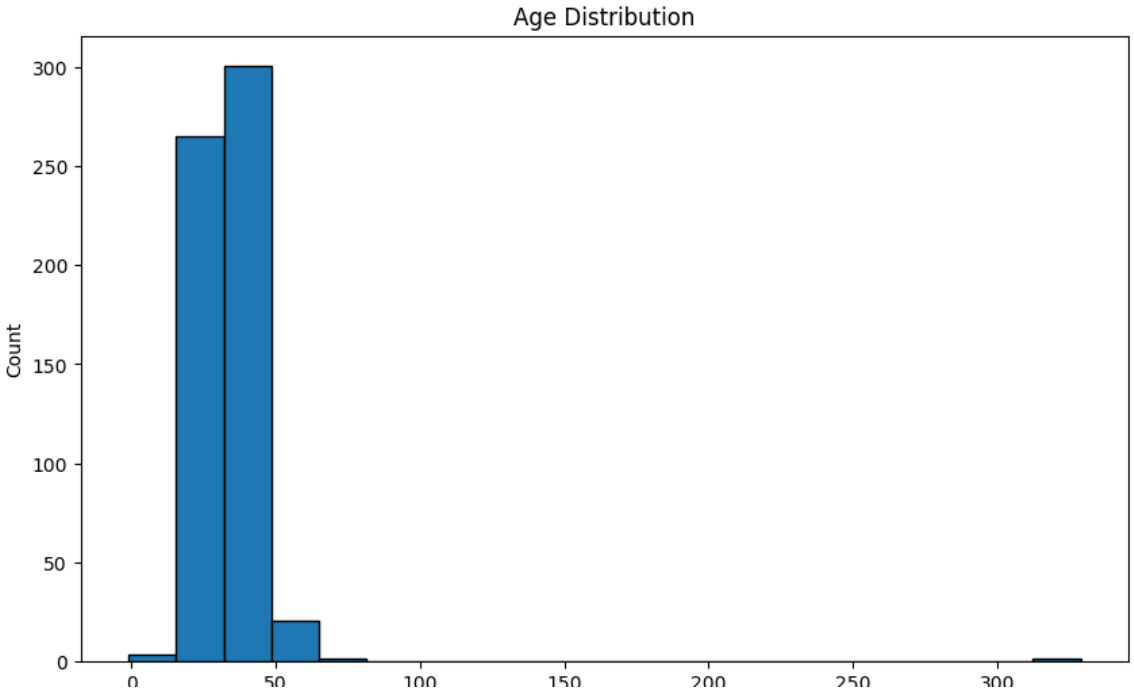
Data Cleaning and Pre-processing

The dataset was cleaned and prepared for analysis. This involved removing unnecessary columns, handling missing values, and standardizing data formats.

Exploratory Data Analysis (EDA)

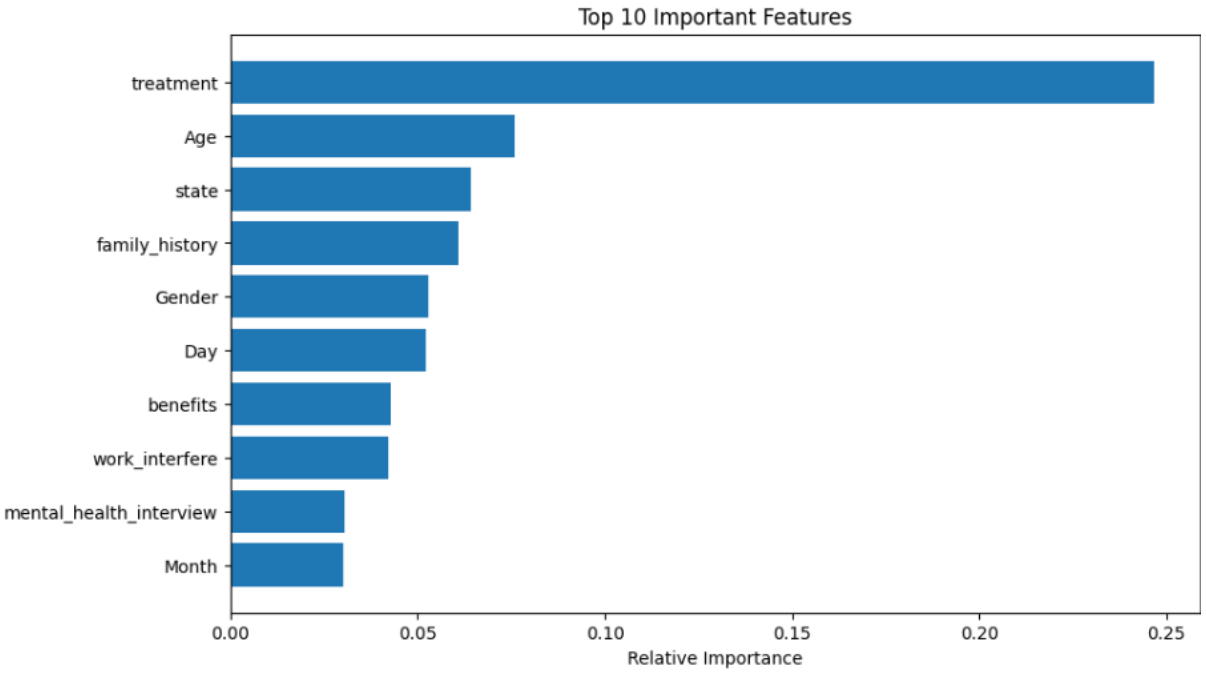
During EDA, key insights were discovered:

- Majority of respondents were from the United States.
- Age distribution spans a wide range, with a concentration between 20 and 40 years.
- A notable proportion reported a family history of mental health issues.



Feature Engineering

Feature engineering included standardizing the 'Age' variable and encoding categorical variables for machine learning.



Machine Learning Modelling

A Random Forest Classifier was chosen for its ability to handle both categorical and numerical data. It was trained on the pre-processed dataset to predict mental health treatment decisions.

```
X = df.drop(columns=['treatment'])
y = df['treatment']
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
```

```
clf = RandomForestClassifier(random_state=42)
clf.fit(X_train, y_train)
y_pred = clf.predict(X_test)
```

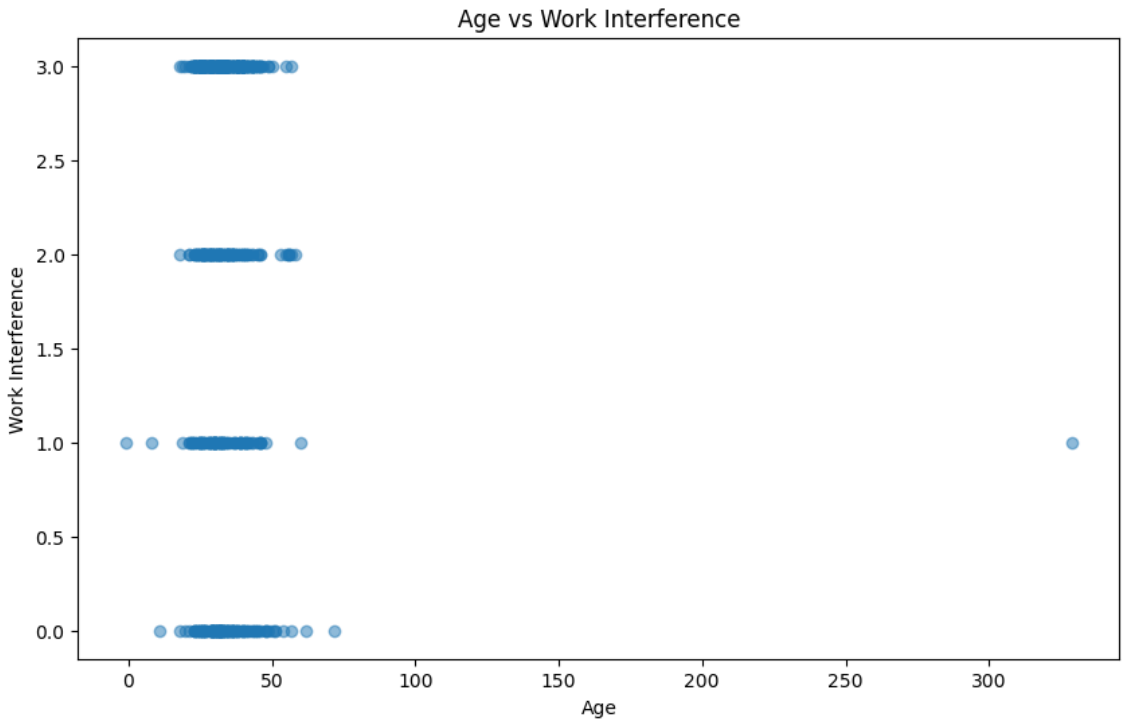
Model Evaluation

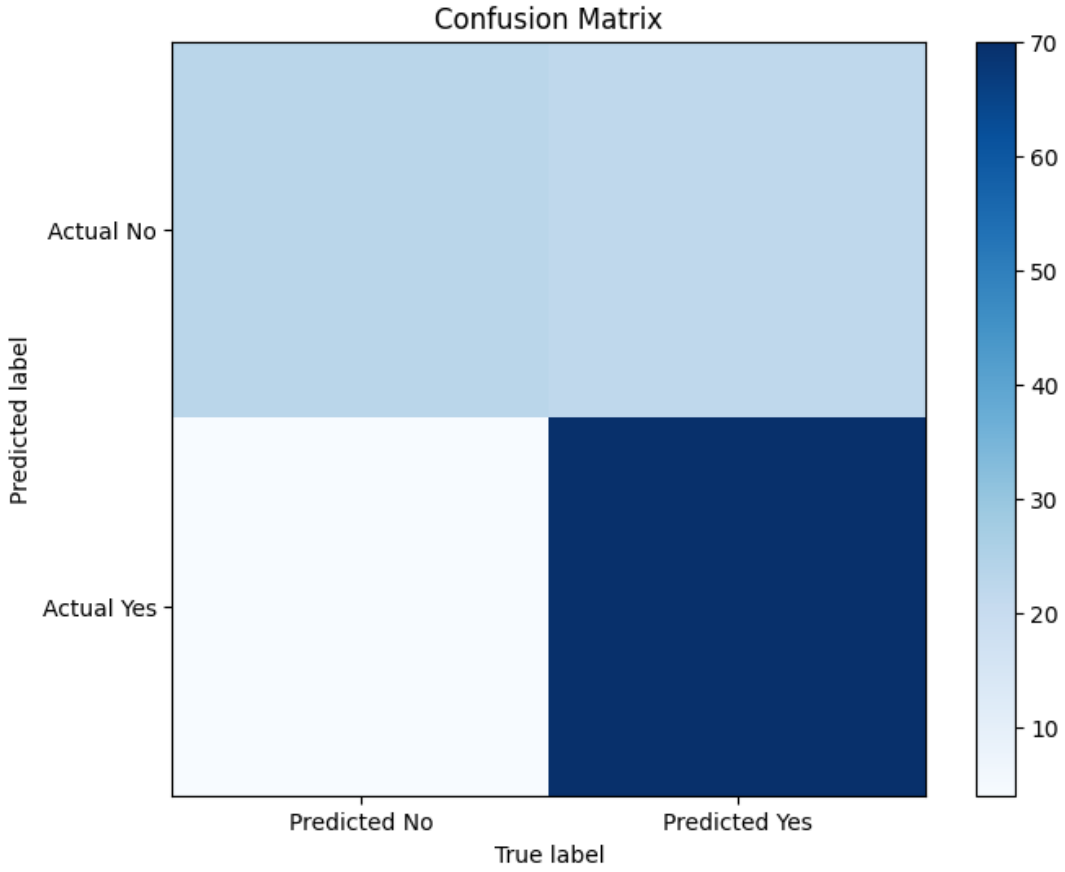
The model achieved an accuracy of approximately 80% on the test set. Precision, recall, and F1-Score were also considered for a comprehensive evaluation.

```
print(f"Accuracy: {accuracy}")
print("\nClassification Report:")
print(classification_rep)
```

```
Accuracy: 0.7815126050420168

Classification Report:
              precision    recall  f1-score   support

           0       0.85      0.51      0.64        45
           1       0.76      0.95      0.84        74

    accuracy                           0.78       119
   macro avg       0.81      0.73      0.74       119
weighted avg       0.80      0.78      0.77       119
```

Results and Visualizations





Conclusion

The People Health Awareness Campaign Analysis project leveraged data-driven insights to evaluate the impact of the health awareness campaign. The project emphasizes the significance of factors such as age, family history, and work interference in shaping individuals' attitudes towards mental health treatment.