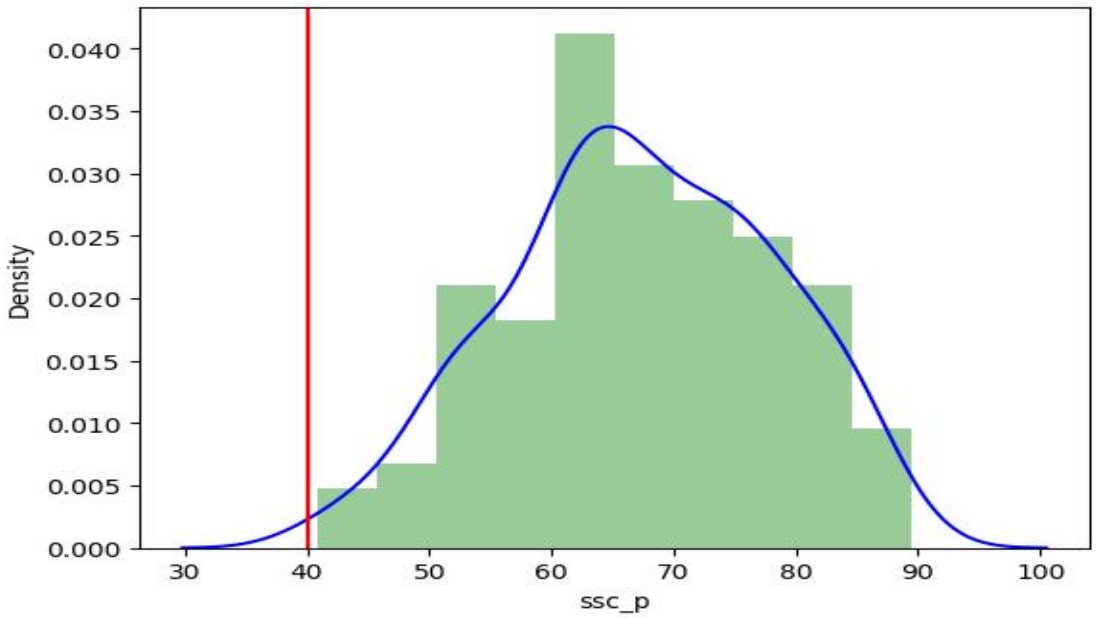
Probability Density Function Explanation

```
def get_pdf_probability(dataset,startrange,endrange):
    from matplotlib import pyplot
    from scipy.stats import norm
    import seaborn as sns
    ax = sns.distplot(dataset,kde=True,kde_kws={'color':'blue'},color='Green')
    pyplot.axvline(startrange,color='Red')
    pyplot.axvline(endrange,color='Red')
    # generate a sample
    sample = dataset
    # calculate parameters
    sample_mean =sample.mean()
    sample_std = sample.std()
    print('Mean=%.3f, Standard Deviation=%.3f' % (sample_mean, sample_std))
    # define the distribution
    dist = norm(sample_mean, sample_std)

    # sample probabilities for a range of outcomes
    values = [value for value in range(startrange, endrange)]
    probabilities = [dist.pdf(value) for value in values]
    prob=sum(probabilities)
    print("The area between range({},{}):{}".format(startrange,endrange,sum(probabilities)))
    return prob
```

```
Mean=67.303, Standard Deviation=10.827
The area between range(40,40):0
0
```



- Imported the required libraries: **pyplot** from matplotlib, **norm** from scipy.stats, and **seaborn**.
- Used sns.distplot() to plot the distribution: the **kde line** is shown in blue, and the **histogram** is displayed in green.
- Added vertical **red lines** at the specified startrange and endrange.

- Calculated the **mean** and **standard deviation** of the dataset.
- Defined a **normal distribution** using the calculated mean and standard deviation.
- Computed probabilities for values between startrange and endrange, summed them up, and returned the total probability.