

### Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Pretest	22	100.0%	0	.0%	22	100.0%
Posttest	22	100.0%	0	.0%	22	100.0%
Gain	22	100.0%	0	.0%	22	100.0%

### Statistics

		Pretest	Posttest	Gain
N	Valid	22	22	22
	Missing	0	0	0
Mean		64.7273	86.8182	.6652
Std. Error of Mean		3.93573	2.36189	.06046
Median		64.0000	87.5000	.7049
Mode		76.00	100.00	1.00
Std. Deviation		1.84602E1	1.10782E1	.28360
Variance		340.779	122.727	.080
Skewness		-.214	-.479	-.289
Std. Error of Skewness		.491	.491	.491
Kurtosis		-.732	-.165	-1.187
Std. Error of Kurtosis		.953	.953	.953
Range		68.00	40.00	.83
Minimum		28.00	60.00	.17
Maximum		96.00	100.00	1.00
Sum		1424.00	1910.00	14.64

### Descriptives

		Statistic	Std. Error
Pretest	Mean	64.7273	3.93573
	95% Confidence Interval for Lower Bound	56.5425	
	Mean Upper Bound	72.9121	
	5% Trimmed Mean	65.0101	
	Median	64.0000	

	Variance		340.779	
	Std. Deviation		1.84602E1	
	Minimum		28.00	
	Maximum		96.00	
	Range		68.00	
	Interquartile Range		29.00	
	Skewness		-.214	.491
	Kurtosis		-.732	.953
Posttest	Mean		86.8182	2.36189
	95% Confidence Interval for Mean	Lower Bound	81.9064	
		Upper Bound	91.7300	
	5% Trimmed Mean		87.5000	
	Median		87.5000	
	Variance		122.727	
	Std. Deviation		1.10782E1	
	Minimum		60.00	
	Maximum		100.00	
	Range		40.00	
	Interquartile Range		21.25	
	Skewness		-.479	.491
	Kurtosis		-.165	.953
Gain	Mean		.6652	.06048
	95% Confidence Interval for Mean	Lower Bound	.5394	
		Upper Bound	.7909	
	5% Trimmed Mean		.6743	
	Median		.7049	
	Variance		.080	
	Std. Deviation		.28367	
	Minimum		.17	
	Maximum		1.00	
	Range		.83	
	Interquartile Range		.58	
	Skewness		-.288	.491
	Kurtosis		-1.189	.953

### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.138	22	.200 <sup>*</sup>	.974	22	.801
Posttest	.156	22	.178	.910	22	.047
Gain	.154	22	.191	.905	22	.038

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance.

### Descriptives

		Statistic	Std. Error
Pretest	Mean	64.7273	3.93573
	95% Confidence Interval for Lower Bound	56.5425	
	Mean Upper Bound	72.9121	
	5% Trimmed Mean	65.0101	
	Median	64.0000	
	Variance	340.779	
	Std. Deviation	1.84602E1	
	Minimum	28.00	
	Maximum	96.00	
	Range	68.00	
	Interquartile Range	29.00	
	Skewness	-.214	.491
	Kurtosis	-.732	.953
Posttest	Mean	86.8182	2.36189
	95% Confidence Interval for Lower Bound	81.9064	
	Mean Upper Bound	91.7300	
	5% Trimmed Mean	87.5000	
	Median	87.5000	
	Variance	122.727	
	Std. Deviation	1.10782E1	
	Minimum	60.00	
	Maximum	100.00	
	Range	40.00	

	Interquartile Range	21.25	
	Skewness	-.479	.491
	Kurtosis	-.165	.953
Gain	Mean	.6652	.06048
	95% Confidence Interval for Lower Bound	.5394	
	Mean Upper Bound	.7909	
	5% Trimmed Mean	.6743	
	Median	.7049	
	Variance	.080	
	Std. Deviation	.28367	
	Minimum	.17	
	Maximum	1.00	
	Range	.83	
	Interquartile Range	.58	
	Skewness	-.288	.491
	Kurtosis	-1.189	.953

#### Statistics

	Pretest	Posttest	Gain
N Valid	22	22	22
Missing	0	0	0
Mean	64.7273	86.8182	.6652
Std. Error of Mean	3.93573	2.36189	.06048
Median	64.0000	87.5000	.7049
Mode	76.00	100.00	1.00
Std. Deviation	1.84602E1	1.10782E1	.28367
Variance	340.779	122.727	.080
Kurtosis	-.732	-.165	-1.189
Std. Error of Kurtosis	.953	.953	.953
Range	68.00	40.00	.83
Minimum	28.00	60.00	.17
Maximum	96.00	100.00	1.00
Sum	1424.00	1910.00	14.63

**Pretest**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	28	1	4.5	4.5	4.5
	36	1	4.5	4.5	9.1
	40	1	4.5	4.5	13.6
	48	2	9.1	9.1	22.7
	52	2	9.1	9.1	31.8
	56	1	4.5	4.5	36.4
	60	2	9.1	9.1	45.5
	64	2	9.1	9.1	54.5
	72	1	4.5	4.5	59.1
	76	3	13.6	13.6	72.7
	80	2	9.1	9.1	81.8
	84	2	9.1	9.1	90.9
	92	1	4.5	4.5	95.5
	96	1	4.5	4.5	100.0
	Total	22	100.0	100.0	

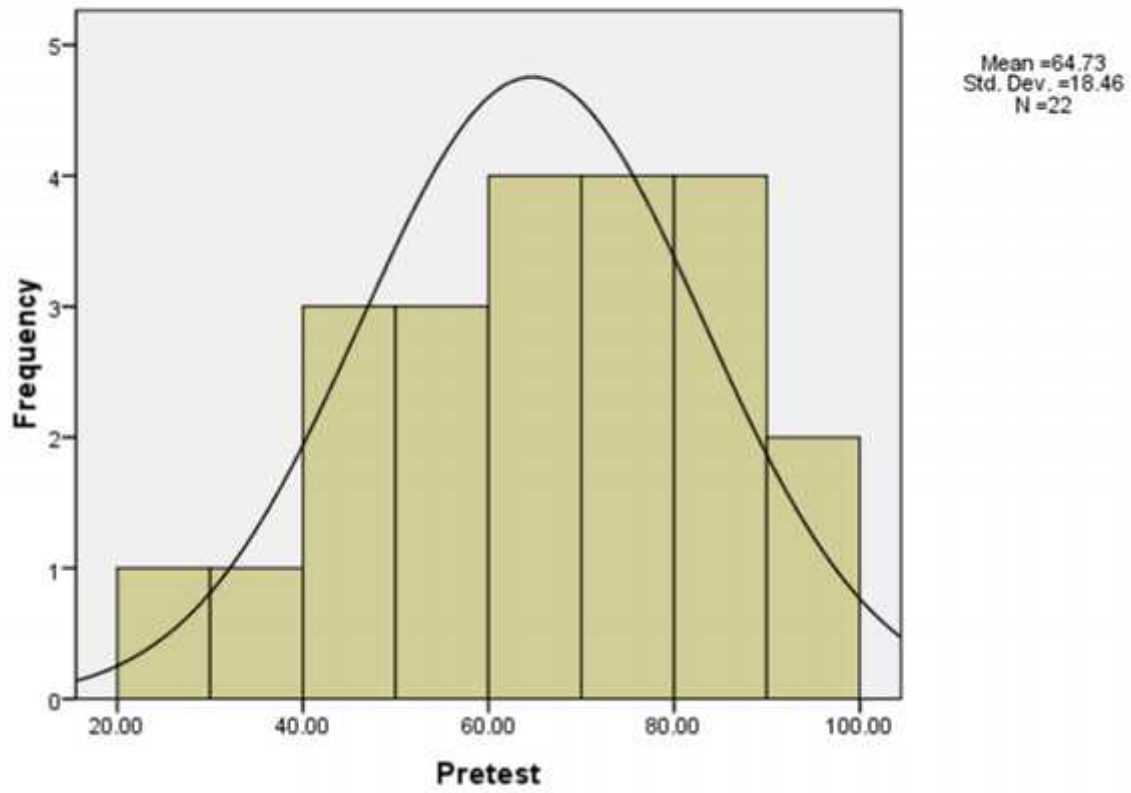
**Posttest**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60	1	4.5	4.5	4.5
	75	4	18.2	18.2	22.7
	80	3	13.6	13.6	36.4
	85	3	13.6	13.6	50.0
	90	4	18.2	18.2	68.2
	95	1	4.5	4.5	72.7
	100	6	27.3	27.3	100.0
	Total	22	100.0	100.0	

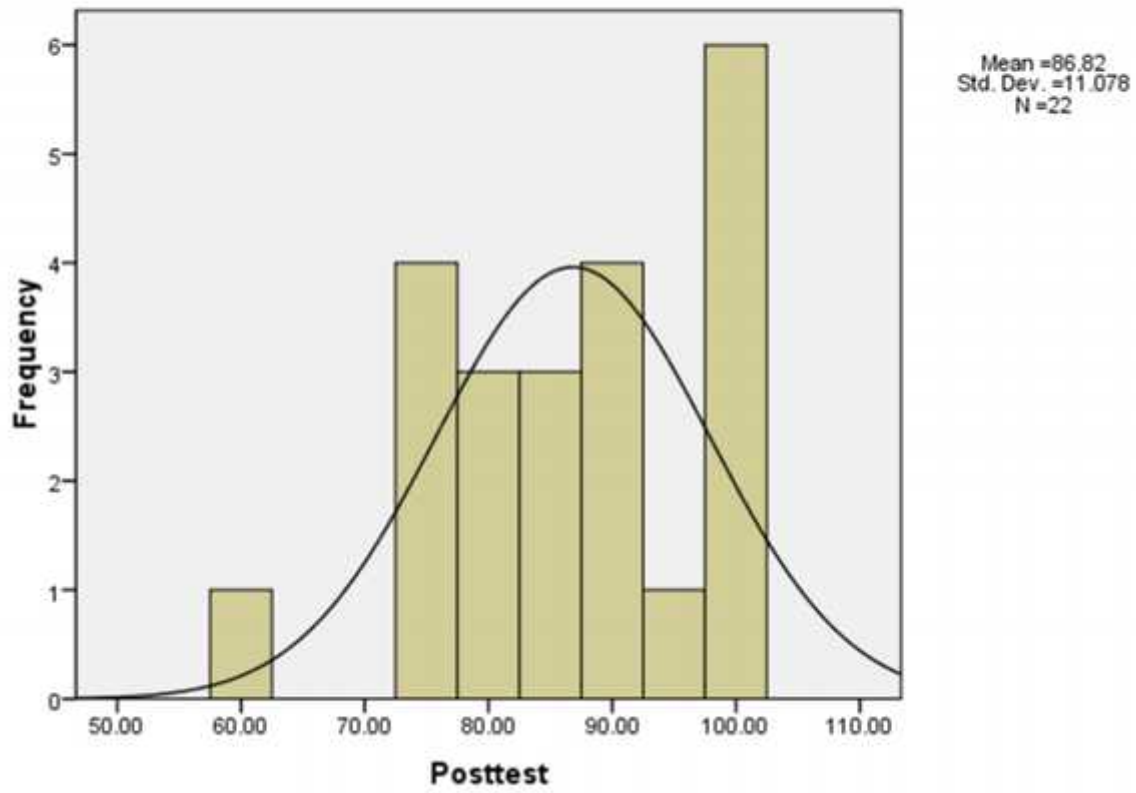
**Gain**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0.166666	2	9.1	9.1	9.1
	0.333333	1	4.5	4.5	13.6
	0.375	2	9.1	9.1	22.7
	0.43	1	4.5	4.5	27.3
	0.444444	1	4.5	4.5	31.8
	0.5	1	4.5	4.5	36.4
	0.51923	1	4.5	4.5	40.9
	0.6875	2	9.1	9.1	50.0
	0.722222	1	4.5	4.5	54.5
	0.765625	1	4.5	4.5	59.1
	0.791666	1	4.5	4.5	63.6
	0.807692	1	4.5	4.5	68.2
	0.861111	1	4.5	4.5	72.7
	1	6	27.3	27.3	100.0
	Total	22	100.0	100.0	

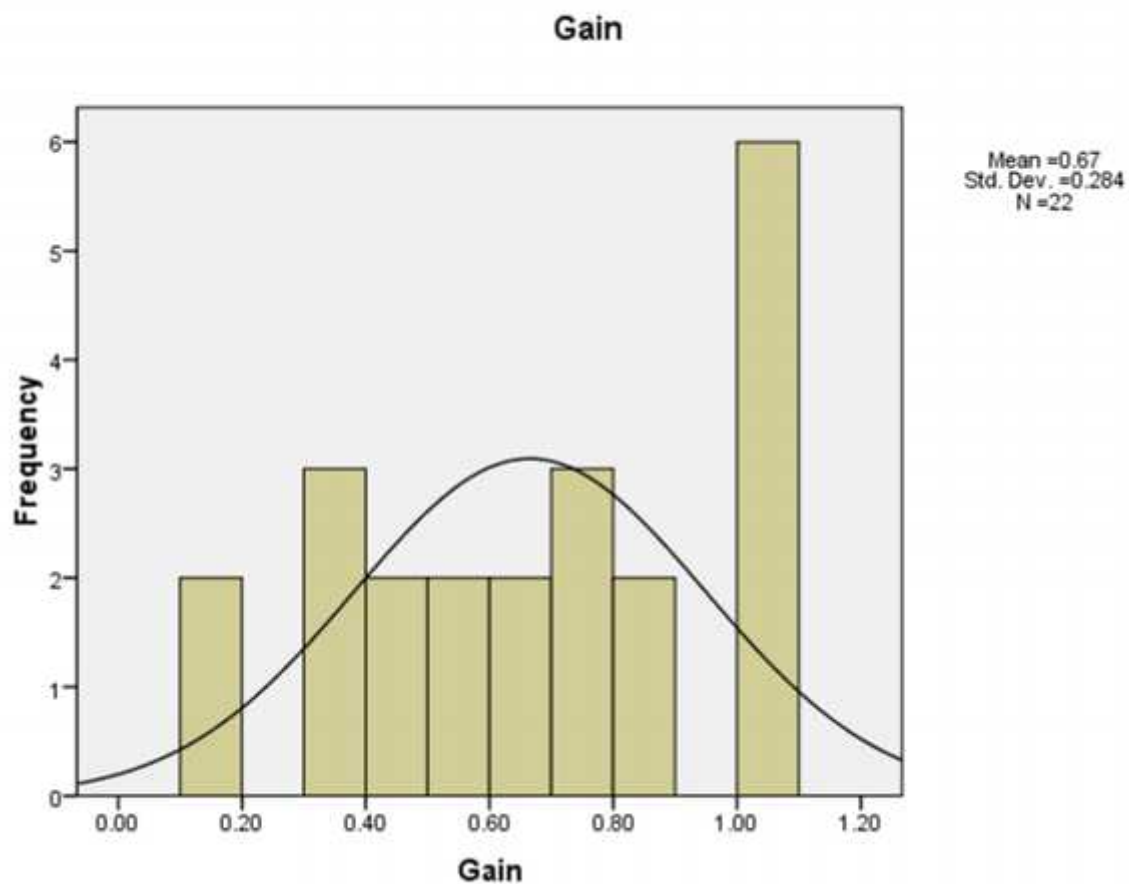
### Pretest



# Posttest







**One-Sample Kolmogorov-Smirnov Test**

		Pretest	Posttest	Gain
N		22	22	22
Normal Parameters <sup>a</sup>	Mean	64.7273	86.8182	.6652
	Std. Deviation	1.84602E1	1.10782E1	.28367
Most Extreme Differences	Absolute	.138	.156	.154
	Positive	.073	.117	.119
	Negative	-.138	-.156	-.154
Kolmogorov-Smirnov Z		.649	.730	.721
Asymp. Sig. (2-tailed)		.794	.661	.675
a. Test distribution is Normal.				

### One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Pretest	22	64.7273	18.46021	3.93573
Posttest	22	86.8182	11.07823	2.36189
Gain	22	.6652	.28367	.06048

### One-Sample Test

	Test Value = 69.99					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pretest	-1.337	21	.195	-5.26273	-13.4475	2.9221
Posttest	7.125	21	.000	16.82818	11.9164	21.7400
Gain	-1.146E3	21	.000	-69.32483	-69.4506	-69.1991

### One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pretest	16.446	21	.000	64.72727	56.5425	72.9121
Posttest	36.758	21	.000	86.81818	81.9064	91.7300
Gain	10.998	21	.000	.66517	.5394	.7909