

Appendix 16.

Hypothesis Testing

One sample test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
pretest	32	50.1563	8.27787	1.46334
posttest	32	84.2188	8.04317	1.42184

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
pretest	34.275	31	.000	50.15625	47.1718	53.1407
posttest	59.232	31	.000	84.21875	81.3189	87.1186

Paired Samples Statistics

			Statistic	Bootstrap ^a			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
Pair 1	pretest	Mean	50.1563	.0402	1.4323	47.3438	52.9688
		N	32				
		Std. Deviation	8.27787	-.13552	.94953	6.26934	9.99457
		Std. Error Mean	1.46334				
	posttest	Mean	84.2188	.0559	1.4142	81.5625	87.0273
		N	32				
		Std. Deviation	8.04317	-.15257	.78784	6.34206	9.41251
		Std. Error Mean	1.42184				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paired Samples Correlations

	N	Correlation	Sig.	Bootstrap for Correlation ^a			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
Pair 1 pretest & posttest	32	.898	.000	.002	.034	.825	.959

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paired Samples Correlations

	N	Correlation	Sig.	Bootstrap for Correlation ^a			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
Pair 1 pretest & posttest	32	.898	.000	.002	.034	.825	.959

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pretest - posttest	-34.06250	3.68902	.65213	-35.39253	-32.73247	-52.232	31	.000

Bootstrap for Paired Samples Test

	Mean	Bootstrap ^a				
		Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper

Pair 1	pretest - posttest	-34.06250	-.01578	.62525	.001	-35.31250	-32.81250
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a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

T Test Posttest

One-Sample Statistics

		Statistic	Bootstrap ^a			
			Bias	Std. Error	95% Confidence Interval	
					Lower	Upper
posttest	N	32				
	Mean	84.2188	-.0394	1.4626	81.2500	87.0313
	Std. Deviation	8.04317	-.18420	.78229	6.22171	9.33253
	Std. Error Mean	1.42184				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

One-Sample Test

Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
posttest	59.232	31	.000	84.21875	81.3189	87.1186

Bootstrap for One-Sample Test

	Mean Difference	Bootstrap ^a				
		Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
posttest	84.21875	-.03937	1.46257	.001	81.25000	87.03125

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

T test Pretest

One-Sample Statistics

		Statistic	Bootstrap ^a			
			Bias	Std. Error	95% Confidence Interval	
					Lower	Upper
pretest	N	32				
	Mean	50.1563	.0327	1.4308	47.3477	53.1250
	Std. Deviation	8.27787	-.25630	.94865	6.15617	9.81684
	Std. Error Mean	1.46334				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

One-Sample Test

Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
pretest	34.275	31	.000	50.15625	47.1718	53.1407

Bootstrap for One-Sample Test

		Bootstrap ^a				
		Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
pretest	Mean Difference 50.15625	.03266	1.43082	.001	47.34772	53.12500

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples