SPSS2 Output Interpretation1
(answers provided at end)

The results below concern data collected from 45 participants in a 3 (treatment: control/placebo/drug) x 2 (testing: before/after) mixed factorial design where treatment is a between subjects factor and testing is a within subjects factor. Participants were randomly assigned to one of three conditions (control/placebo/drug) and had their blood pressure measured prior to the treatment (bptime1), and again one week after the treatment (bptime2). Participants also had their potassium measured (after treatment), and reported their age and gender.

1. Here are the results of the analysis of age. Write up the participants and design section of the results.

Group Statistics

	gender	N	Mean	Std. Deviation	Std. Error Mean
age	male	23	47.0435	13.13385	2.73860
	female	22	49.0909	12.60729	2.68788

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
age	Equal variances assumed	.118	.733	-.533	43	.597
	Equal variances not assumed			-.534	42.999	.596

2. Participants, across all three conditions had their blood pressure tested prior to treatment, and then one week later following the treatment manipulation. Only one of the three groups received the drug (i.e., treatment), whereas the other two groups were control and placebo participants. The purpose of the analysis below was to determine if the group that received treatment differed significantly in BP from time1 to time 2. Examine the output below of a related samples t-test on blood pressure and write up the results of the test in APA format in a summary paragraph. Make sure to include the means and standard deviations in your writeup. Also include the effect size (Cohen's d) in your writeup.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	bptime1	169.0000	15	21.87954	5.64927
	bptime2	144.4667	15	18.04703	4.65972

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	bptime2 - bptime1	-24.53333	8.98305	2.31941	-29.50798	-19.55868	-10.577	14	.000

3. The results below represent a one-sample t-test examining whether potassium levels in those who received the blood pressure drug differ significantly from that of the population as a whole. First report the findings of this hypothesis test in APA format and include the effect size along with the means and standard deviations. Then, report the findings for a 90% confidence interval, and report the interval for the population mean (rather than the difference).

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
potassium	15	4.9800	.57470	.14839

One-Sample Test

	Test Value = 4.2					
					90% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
potassium	5.256	14	.000	.78000	.5186	1.0414

answers:

1. A total of 45 participants took part in a 3 (treatment: control/placebo/drug) x 2 (testing: before/after) mixed factorial design where treatment is a between subjects factor and testing is a within subjects factor. Participants were randomly assigned to one of the three treatment groups and had their blood pressure tested prior to treatment, and then again one week later. Of the 45 participants who took part in the study, 23 were male (*M* age = 47.04, *SD* = 13.13) and 22 were female (*M* age = 49.09, *SD* = 12.61).

2. A related samples t-test was conducted on blood pressure readings both prior to and following a one week treatment for those participants who received the drug. The results indicated a significant difference between blood pressure ratings before treatment (*M* = 169.00, *SD* = 21.88) and after treatment (*M* = 144.47, *SD* = 18.05), t (14) = -10.58, $p < .05$, d = -2.73.

3. A one sample t-test was conducted on potassium levels for only those participants who received the drug. Their potassium levels were compared to the mean population levels of 4.2. The results indicated that, as predicted, potassium levels in the drug group were significantly higher (*M* = 4.98, *SD* = .58) than that of the general population, t (14) = 5.26, $p< .05$, d = 1.37, $CI_{.90}$ = 4.72 to 5.24.