

Recitation 6 - P8130 Fall 2017

October 20, 2017

Problem 1

Rosner textbook 8th edition, 9.7-9.8.

Health Services Administration

Suppose we want to compare the length of hospital stay for patients with the same diagnosis at two different hospitals. The results are shown in Table 1.

Table 1: Comparison of length of stay in 2 hospitals

First hospital	21, 10, 32, 60, 8, 44, 29, 5, 13, 26, 33
Second hospital	86, 27, 10, 68, 87, 76, 125, 60, 35, 73, 96, 44, 238

9.7 Why might a t test not be very useful in this case?

9.8 Carry out a nonparametric procedure for testing the hypothesis that lengths of stay are comparable in the two hospitals.

Problem 2

Rosner textbook 8th edition, 9.17-9.22.

Hypertension

Polyunsaturated fatty acids in the diet favorably affect several risk factors for cardiovascular disease. The principal dietary polyunsaturated fat is linoleic acid. To test the effects of dietary supplementation with linoleic acid on blood pressure, 17 adults consumed 23 g/day of safflower oil, high in linoleic acid, for 4 weeks. Systolic blood pressure (SBP) measurements were taken at baseline (before ingestion of oil) and 1 month later, with the mean values over several readings at each visit given in Table 9.12.

TABLE 9.12 Effect of linoleic acid on SBP

Subject	Baseline SBP	1-month SBP	Baseline – 1-month SBP
1	119.67	117.33	2.34
2	100.00	98.78	1.22
3	123.56	123.83	-0.27
4	109.89	107.67	2.22
5	96.22	95.67	0.55
6	133.33	128.89	4.44
7	115.78	113.22	2.56
8	126.39	121.56	4.83
9	122.78	126.33	-3.55
10	117.44	110.39	7.05
11	111.33	107.00	4.33
12	117.33	108.44	8.89
13	120.67	117.00	3.67
14	131.67	126.89	4.78
15	92.39	93.06	-0.67
16	134.44	126.67	7.77
17	108.67	108.67	0.00

- 9.17 What parametric test could be used to test for the effect of linoleic acid on SBP?
- 9.18 Perform the test in Problem 9.17, and report a p -value.
- 9.19 What nonparametric test could be used to test for the effect of linoleic acid on SBP?
- 9.20 Perform the test in Problem 9.19, and report a p -value.
- 9.21 Compare your results in Problems 9.18 and 9.20, and discuss which method you feel is more appropriate here.