

Module – 2

Case-study 1

Case- ‘Depression Analysis in Niramay Clinic, Kolkata’

As part of a long term study of individuals 60 years of age or older, sociologist and physicians at the Niramay Clinic in Kolkata investigated the influence of three geographic locations on depression. A sample of 60 individuals, all in reasonably good health was selected, out of which 20 individuals were residents of Kolkata, 20 were residents of Durgapur, and 20 were residents of Jalpaiguri. Each of the individuals sampled was given a standardized test to measure depression in continuous scale. The data collected follow; *higher test scores indicate higher levels of depression*. These data are available on the disk in the **Medical test1**.

A second part of the study considered the relationship between geographic location and depression for individuals 65 years of age or older, who had a chronic health condition, such as arthritis, hypertension, and/or heart ailment. A sample of 60 individuals with such conditions was identified. Again 20 were residents of Kolkata, 20 were residents of Durgapur, and 20 were residents of Jalpaiguri the levels of depression recorded for this study follow. These data are available on the data disk in the file **Medical test 2**.

Data from Medical test 1			Data from Medical test 2		
Kolkata	Durgapur	Jalpaiguri	Kolkata	Durgapur	Jalpaiguri
3	8	10	13	14	10
8	10	7	14	9	11
7	9	3	17	15	15
3	8	5	17	12	18
9	8	11	21	16	12
8	7	8	21	24	14
8	8	4	16	18	17
5	4	3	14	14	8
5	13	7	13	15	14

2	10	8	17	17	16
6	6	8	12	20	18
2	8	7	9	11	17
6	12	3	12	23	19
6	8	9	15	19	15
9	6	8	16	17	13
7	8	12	15	14	14
5	5	6	13	9	11
4	7	3	10	14	12
7	7	8	11	13	13
3	8	11	17	11	11

Based on the above facts and figures and your understanding on ANOVA, what can we conclude on influence of location on depression level for medical data set 1 and medical data set 2? Can you also suggest best location (Kolkata, Jalpaiguri, Durgapur) to stay in case you are in good health or suffering from chronic health condition. In case, assumption of ANOVA is violated, is there a possible alternative to arrive at some conclusion?