CHAPTER 4

CORONARY HEART DISEASE AND SMOKING AS CORRELATES OF
EMOTIONAL OR PSYCHOLOGICAL DISTRESS.

Outline

1. Introduction.
2. Layout of Experiments.
3. Detail of Significant Results.
4. Summary.
1. INTRODUCTION

Emotion is bound up with feelings. In the Dictionary of Psychology, Drever (1912) is a little less subjective in his definition. He describes an emotion as widespread bodily changes. Mentally, this is accompanied by strong feelings and impulses to behave in particular ways. He has added two more ingredients to the mixture - bodily states and behaviour.

Emotions have an important role in human life. They significantly effect human behaviour as well as bodily mechanisms like heart rate, sweating, trembling etc.

The results of many studies done in recent part indicate that modest but reliable associations exist between some of the personality variables and CHD. Type A personality, depression, hostility and anxiety have revealed a strong association with CHD. Mathew et. al. (1977) have reported that ratings on potential for hostility were significantly predictive of the development of CHD.

The symptoms of coronary prone behaviour are characterized by intense striving for achievement, competitiveness, easy provokability, impatience, time urgency, abruptness of gesture and speech, overcommitment to vocation/profession and excessive drive and hostility (Siltanen 1984).
The value of different combinations of psychosocial variables in 66 male coronary patients from 40 to 60 years age group under emotional stress was studied. Interview and observation techniques were used to determine the emotional stress levels. It was recommended that other related to stress and coronary disease be studied, using progressive regression techniques (Lauzunic et. al. 1963).

II. THE LAYOUT OF EXPERIMENT

The chapter is related to a study of emotional distress, which is comprised of one experiment based on three hypotheses. ANOVA has been used to determine the 'main effects' and interactions of disease, in terms of CHD patients and normals, and smoking in terms of smokers and non-smokers. The bivariate factorial setting of the study provides four groups with inter-variable level control. Since t-test yields results after taking into account 'groups as a whole', it lacks in inter-group matching. The t-test has been employed to serve this purpose. Details of other methodological considerations have already been discussed in chapter two of the report.

Experiment No. 2

1. Problem: Emotional Distress = f(CHD x Smoking)

2. Related Null Hypotheses.

H₀₁ CHD does not affect emotional distress.
H₀₂ Smoking does not affect emotional distress.
H₀₃ CHD and smoking do not interact.
3. Results: ANOVA Summary (α .05)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>df</th>
<th>SS</th>
<th>MSq.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between CHD</td>
<td>1</td>
<td>3576.04</td>
<td>3576.04</td>
<td>56.2962**</td>
</tr>
<tr>
<td>Between Smoking</td>
<td>1</td>
<td>249.64</td>
<td>249.64</td>
<td>4.0696091</td>
</tr>
<tr>
<td>CHD x Smoking</td>
<td>1</td>
<td>190.44</td>
<td>190.44</td>
<td>3.104536</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>61.3425</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** significant at .01 level of significance.
* significant at .05 level of significance.

III. DETAIL OF SIGNIFICANT RESULTS

H04 CHD: rejected at .01 level of significance.
Two levels of CHD are further tested and the t-test results are as follows:

(a) CHD smokers

<table>
<thead>
<tr>
<th>CHD smokers &gt; .01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal smokers.</td>
</tr>
</tbody>
</table>

(b) CHD non-smokers

<table>
<thead>
<tr>
<th>CHD non-smokers &gt; .01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal non-smokers.</td>
</tr>
</tbody>
</table>

Coronary heart disease promotes emotional or psychological distress amongst smokers as well as non-smokers.

H05 Smoking: rejected at .05 level of significance.
Two levels of smoking are further tested and the t-test results are as follows:

(a) CHD Smokers

<table>
<thead>
<tr>
<th>CHD smokers &gt; .05</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD non-smokers</td>
</tr>
</tbody>
</table>

(b) Normal Smokers

<table>
<thead>
<tr>
<th>Insignificant at .05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal non-smokers.</td>
</tr>
</tbody>
</table>
Showing emotional or psychological distress level of various groups.
Smoking promotes emotional distress amongst
the patients of CHD whereas it does not do so in
the case of normals.

H06 CHD x Smoking: retained at .05 level of significance.
The sub-groups of the '2 x 2' interaction are further tested and the
't' test results are:

(a) CHD Smokers

<table>
<thead>
<tr>
<th>CHD smokers</th>
<th>&gt; .01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal non-smokers</td>
<td></td>
</tr>
</tbody>
</table>

Both, CHD and smoking, promote emotional distress.

(b) CHD non-smokers

<table>
<thead>
<tr>
<th>CHD non-smokers</th>
<th>&gt; .01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal smokers</td>
<td></td>
</tr>
</tbody>
</table>

CHD, independent of smoking, promotes emotional
distress.

The diagrammatic representation of the results
has been presented in the diagram 4.1. It can be clearly
seen that emotional/psychological distress is maximum
in CHD smokers and minimum in normal non-smokers
amongst the four groups.
IV SUMMARY

1. CHD promotes emotional distress in smokers as well as non-smokers.

2. Smoking promotes emotional distress in CHD patients only.

3. Smoking does not affect emotional distress in normals.

4. CHD, independent of smoking, promotes emotional distress.

5. The highest level of emotional distress has been found in CHD smokers, whereas lowest has been found in normal non-smokers.