CHAPTER V

RESULT-ANALYSIS

&

DISCUSSION

PART I
CHAPTER - V

RESULT- ANALYSIS & DISCUSSION

In order to ensure a logical flow of reasoning, it would be appropriate to approach this discussion by analyzing the obtained results in the light of the hypotheses stated previously, ascertain their implications and ensure the degree of relation that exists among variables and finally attempt to analyze the underlying cause of the obtained results.

[PART - I (A)]

(MAIN EFFECTS OF INDEPENDENT VARIABLES ON DEPENDENT VARIABLES)

Null hypothesis 1 A (Ho A) - Blood group has no significant main effect on anxiety.

Result-analysis and discussion - The result shown in ANOVA SUMMARY table-(5) reveal the fact that the main effect of blood group is significant for anxiety (F = 1.75, P < 0.05 for df 3,304).

To obtain the significant differences between particular groups, Tuckey method for post hoc comparison was applied. The results of table-(5a) indicate that there are significant mean differences nearly among all blood groups in the scores of anxiety. For example, mean of blood group A (MBG ‘A’ = 15.09) differs significantly with the mean of blood group B (MBG ‘B’ = 26.40, t = 10.11, P <0.01), blood group O (MBG ‘O’ = 21.26, t = 5.52, P < 0.01) and blood group AB
(MBG ‘AB’ = 22.45, t = 6.58, P < 0.01). In the same way, the mean of blood group B differs significantly with the mean of blood group ‘O’ (MBG ‘B’ = 26.40, MBG ‘O’ = 21.26, t = 4.59, P < 0.01) and mean of blood group ‘AB’ (MBG ‘B’ = 26.40, MBG ‘AB’ = 22.45, t = 3.53, P < 0.01). Mean of blood group O does not differs significantly with the mean of blood group ‘AB’, however.

On the basis of the result-analysis and pos hoc comparison, it is clear that blood group has a significant role in determining the level of anxiety. The subjects of blood group ‘B’ are having high level of anxiety, while subjects of blood group A are having low and moderate level of anxiety (figure-1).

Study already performed by Saxena & Prakash (1997) reveals that B blood group females and AB blood group females are found to be much high in anxiety. In a study done by Eysenck (1977) it was found that the persons of AB blood group might be considered as higher on neuroticism. As higher anxiety causes neuroticism. It can be said that present study confirms the results of Eysenck, and also supported by the results of Tiwari and Prakash (2002) in which, it was established that subjects of blood group ‘B’ are more prone to depression and anxiety.

V.V. Jogawar (1977) confirmed a clear relation between blood group and emotionality. It was shown in the study that persons of blood group B are found to be highly emotional in comparison to other blood groups of ABO blood group system.

Present study does not confirm the results of Jogawar’s study directly but more or less it offers some indirect support since emotionality leads a person towards anxiety.

Some other studies are also partially supporting the results of present investigation. In a study R.B. Cattell (1964) found the persons of blood group
AB as most anxious than those of other blood groups. But, contrary to our results Blood group B is found lowest ‘tense’ or ‘anxious’ in this study.

All these studies clearly shown a significant relationship between ABO blood group system and anxiety, irrespective of a few differences and considerations found among them.

In the light of confirmations and contradictions discussed above, it might be said that the results are quite conclusive, but still further researches are needed showing the relation of blood group with several other social, cultural and psychological factors to justify these results.

Since results of present study are revealing the effect of blood group on anxiety, our hypothesis 1-A is rejected and an alternative hypothesis may be proposed -

**Alternative hypothesis 1A ($H_o 1A$) – Blood group has a significant effect on anxiety.**

**Null hypothesis 1 B ($H_o 1B$) – Blood group has no significant main effect on the locus of control of the subjects.**

**Result-analysis and discussion** – Controlling one’s own life means excursing authority and influence over it by directing and regulating it oneself. People vary in the degree of perceived control over their own lives. Some feel they can do just about anything they set their minds to do. They regard themselves as responsible for their own successes and failures, and view misfortune as the result of personal mistake. They believe that they can and do master control and shape their own lives, and that outcomes of situations are contingent in their own choices and actions. Others felt that any good things that happen are due mostly is luck-fortunate outcomes that they desire but do not design. They believe that personal problems result mostly from bad breaks and feel little ability to regulate or avoid
the bad things that happens. They think they are powerless to achieve desired ends because comes of situations are determined by luck, fate, god, other peoples etc.

Results of ANOVA summary table-(6) indicate the fact that there is no significant main effect of blood group on locus of control (F = 0.409, N.S.). Hence, our hypothesis is retained.

**Null hypothesis 1C (H_01C)** – There is no significant main effect of blood group on blood pressure (systolic and diastolic, both).

**Result-analysis and discussion** – Results of ANOVA summary tables-(7&8) reveal that there is no significant main effect of blood group on systolic blood pressure (F = 0.420) and diastolic blood pressure (F = 0.373).

Thus it may be concluded here that the blood pressure of the subjects is not determined by the blood group. Hence, our hypothesis is retained.

The results of present study are found contradictory to previous researches available in this field. In a study done by Azevedo et al. (1964) an apparent association was found between ABO blood group type and diastolic blood pressure. The study was administrated on 5777 members of 1068 Brazilian families of mixed ethnic origin. The mean diastolic blood pressure of group ‘O’ individuals was found to be 1.7 mm high than their normal siblings with other ABO types. The cause and biological significance of that study was remained unknown.

Zudy-Z Miller et al. (1979), in order to verify the results of Azevedo conducted his study taking all the blood group systems i.e. ABO, Ph, Kidd, Kell, Duffy, P. Heptaglobin, PGI-1 or ACP but could not find any relationship between blood group and blood pressure. But the results supported the hypothesis that there may be significant physiological differences between individuals of different blood types.
In present study although no significant differences were found in both systolic and diastolic blood pressure among different blood groups, yet the results show clear mean differences in systolic blood pressure of the subjects of different blood types.

Higher mean score was found in blood group ‘B’ and ‘AB’ respectively. In this way it may be concluded that blood group may be a vital factor in determining blood pressure.

**Null hypothesis 2 A (H₀ 2A)** – Sex has no significant effect on anxiety of the persons of different blood groups.

**Result-analysis and discussion** – The result shown in ANOVA summary table (5) reveal the fact that the main effect of sex in not significant for anxiety (F = 0.054). Hence our hypothesis is retained.

These results are contradictory to some traditional views and some previous studies, in which females are considered as more prone to anxiety (Chatterji et al., 1976; G. Rajmohan & A. Kuppan, 1980). But it confirms to the findings of Devi (1969), Dutt and Brar (1972) and also that of Dodia, Geeta (2001), that there is no significant difference in the anxiety level of males and females in general.

In the light of similarities and contradictions in results of various previous studies, it is suggested by researcher that education, economic status, domestic responsibilities and other factors, which are known to be accountable to elevate the level of anxiety, are not very different for males and females in present era. Both male and female have to face nearly same stress either qualitatively or quantitatively. Hence there is a need to evaluate the well-known schemata, that females has more anxiety than males.
Null hypothesis 2B (H₀ 2B) – Sex has no significant effect on locus of control of the persons of different blood groups.

Results-analysis and discussion – The results shown in ANOVA summary table-(6) show that the main effect of sex is not significant for locus of control of the persons of different blood groups (F = 0.086). Hence our hypothesis is retained.

There results are contradictory to the theory of personal control, which predicts that women have a lower sense of control than men. Results are also contradictory to the findings of Mirowsky & Ross (1986, 1989) and Ross & Sastry (1999), who exposed that as compare to men, women have more external locus of control due to more economic dependency, restricted opportunities for paid employment, routine and unfulfilling work and unfairness in the division of household labor.

If we go through the previous researches, inconsistencies in findings reveal clearer. Some researches show that women’s sense of personal control is lower than men (Mirowsky and Ross 1983, 1984; Ross and Wright 1988, Thoits 1987) but in some, it is not (Ross and Bird 1994, Ross and Mirowsky 1989). Some observers argue that men and women are more equal in older age (Gove 1984). Inconsistencies in research results suggest that women’s sense of control is lower under some conditions but not others. In the present study sex is not significantly affecting locus of control of the objects.

Null hypothesis 2C (H₀ 2C) – Sex has no significant effect on blood pressure (systolic and diastolic) of the persons of different blood groups.

Results-analysis and discussion – The results shown in ANOVA summary tables-(7&8) indicate that the main effect of sex is not significant for blood
pressure of the persons of different blood groups (systolic, F = 0.018; diastolic, F = 0.068). Hence, our hypothesis is retained.

**Null hypothesis 3A (H₀ 3A) - There is no significant effect of age on anxiety of the males and females of different blood groups.**

**Results analysis and discussion** - According to the results shown in ANOVA summary table-(5), it is clear that the main effect of age is significant for anxiety (F = 1.678, P < 0.05 for df 1,304).

   It is revealed by the results that age factor is significantly affecting anxiety level and its occurrence. Elderly subjects of present study are having high level of anxiety in comparison to their younger counterparts.

   To obtain the significant differences between particular groups, Tuckey method for post hoc comparison was applied. Results of table-(5a) reveal the fact there is significant difference between total young adult males (M=18.47) and total old adult males (M=23.30; t=4.31, P < 0.01), total young adult females (M=19.50) and total old adult females (M=23.90, t=3.93, p < 0.01). In the same way significant difference are found between total young adults (M=19) and total old adults (M = 23.60, t = 2.86, P < 0.01). Differences are clearly shown in figures- 2 & 4.

   Thus on the basis of results our null hypothesis is rejected. Significant differences were found in the anxiety level of the young and old adult subjects of different blood groups, hence an alternative hypothesis may be proposed -

   **Alternative hypothesis 3A (Hₐ 3A) - There is significant effect of age on the anxiety level of the males and female subjects of different blood groups.**
Null hypothesis 3B (H₀ 3B) - There is no significant effect of age on locus of control of the male and female subjects of different blood groups.

Result-analysis and discussion - Results of ANOVA summary table-(6) indicate that only age is significantly affecting locus of control [F (1, 304) = 2.746, P < 0.01]. Neither blood group nor sex has a significant main effect on locus of control.

When we compare the mean score of both young adults (6.59) and old adults (9.56), we see that old adult subjects are more externally controlled in comparison to elder counterparts. External control refers to the individuals who believe that reinforcement are not under their personal control but in control of powerful others, luck, chance, fate etc. In young age, all physical and mental powers are in control of an individual that is why for every success or failure, he/she keeps confidence and faith in his/her powers only. But gradually with the advancement of age, physical and mental capacities start diminishing. Hence, a person starts depending on others that is why he becomes externally controlled with aging.

To obtain the significant differences between particular groups, Tuckey method for post hoc comparison was applied. Results of table-(6a) reveal the fact, that there is significant difference between total young adult males (M=6.32) and total old adult males (M=9.30; t=2.98, P < 0.01), total young adult females (M=6.85) and total old adult females (M=9.82, t=2.97, p < 0.01). In the same way significant differences are found between total young adults (M=6.59) and total old adults (M=9.56, t=2.97, P < 0.01). In case of A, B and O blood groups, there are significant difference between young adult – males and females with their elderly counterparts. However in case of AB blood group, AB young adult - males and females significantly differ from their older female counterparts, but not from their older male counterparts. In all cases, old adult group is found significantly more external then young adult group (as shown in figures- 7 & 9).
Researches available in the field show inconsistent and often contradictory results. In a review Lachman (1986) concluded that about one third of studies found low level of control among the elderly, one-third found high levels, and one third found no association between age and the sense of control. Rodin (1986) also concluded that there was little evidence of a decrease in perceived control with age. Inconsistencies in these studies may have resulted from the use of truncated, non-comparable, unrepresentative or small samples. Many samples contained only elderly persons, so the comparative data showing higher levels of control among the young and middle-aged was unavailable; and even studies, conducted for comparison among different age groups, often used unrepresentative sample of young people (such as college students) or elders (such as health plan members).

Results of present study reveal that age has a significant effect on locus of control of the young adult and old adult - males and females of different blood groups. Since, our hypothesis stating that there is no significant effect of age on locus of control of males and females of different blood groups, would be now rejected and an alternative hypothesis may be proposed -

Alternative hypothesis 3B (Hₐ 3B) - There is significant effect of age on locus of control of males and females of different blood groups.

Null hypothesis 3C (H₀ 3C) - There is no significant effect of age on blood pressure (systolic / diastolic) of the males and females of different blood groups.

Result analysis and discussion - Results of the ANOVA summary table-(7&8) indicate that the main effect of age is not significant for both systolic (F = 1.206) and diastolic (F = 0.905) blood pressure. Although mean score of both the groups indicate that elderly subjects are having slightly high systolic and diastolic blood
pressure (as shown in figures –12, 14, 17, 19), but they do not differ significantly & both fall in the normal range of blood pressure.

Hence, our hypothesis 3C is not rejected or it may be said that our null hypothesis is retained.

Our results are in disagreement with some previous studies, conducted on Indian population (Indrayan, Shrivastava and Bagchi, 1972a, 1972b; Malhotra & Ganguli, 1976; Shrivastava, Varma, Kumar and Shrivastava, 1977; Mukhopadhyaya and Chakraborty, 1978; Gupta, Siwach and Gupta, 1979; Rao Sambasiva R., 1980; R. Sambasiva Rao, 1983; Sharma, B.K. et al., 1985; Mukherjee, Byard, Bhattacharya and Rao, 1988; Nirmala, 1991; Goel, N.K. & Kaur, 1996; Nirmala & Reddy, 1996). In all these studies, it was observed that there is a general tendency for the mean blood pressures to rise with age. However, our results support to result of Malhotra (1971) who did not find any correlation between blood pressure and age in north and south Indian Railways workers.

Our results are contradictory to the results of S.P. Gupta et al. (1977) who revealed that, with increase in age the blood pressure (both systolic and diastolic) showed a steady and this trend was observed in both the sex groups.

Our results are also not supporting to the results of A. Nirmala and P.C. Reddy (1996), who reported in their study that the means of both blood pressures increase with age, but the increase of diastolic blood pressure is not marked as systolic pressure. The diastolic pressure tends to decrease after age 60 years in both sexes.
[PART-I(B)]

(INTERACTIVE EFFECTS OF INDEPENDENT VARIABLES ON DEPENDENT VARIABLES)

Null hypothesis 4A (H₀ 4A) - There is no significant effect of the interaction between the following variables on the anxiety level / locus of control / blood pressure.

(a) Blood group & sex
(b) Blood group & age
(c) Sex and age
(d) Blood group X sex X age

In order to prove the aforesaid hypotheses, these were classified into four parts.

Null hypothesis 4A₁ (H₀ 4A₁) - There is no significant effect of the interaction between blood group X sex on anxiety level.

Result-analysis and discussion - Results of ANOVA summary table-(5) reveal the fact that the interaction between blood group X sex is not significant for anxiety [F (3, 304) = 0.047, P > 0.05].

In this way it may be said that male and female subjects of any blood group are not showing any distinction in their anxiety level. Hence, our hypothesis 4A is not rejected.
Null hypothesis 4A$_2$ (H$_0$ 4A$_2$) - There is no significant effect of interaction between blood group and sex on the locus of control.

**Result-analysis and discussion** - Results of ANOVA summary table-(6) indicate that the interaction between blood group and sex does not significantly affect the orientation towards externality and internality of an individual (F (3, 304) = 0.0336 ; P > 0.05).

We can conclude here that male and female subjects of any blood group are not showing any distinction in their orientation of external and internal control. Hence, our null hypothesis is retained.

Null hypothesis 4A$_3$ (H$_0$ 4A$_3$) - There is no significant effect of interaction between blood group and sex on blood pressure (systolic and diastolic) of the subjects.

**Result-analysis and discussion** - Results of ANOVA summary table-(7&8) reveal the fact that the interaction between blood group and sex is not significantly affecting to level of blood pressure (systolic and diastolic, both) [systolic, F (3, 304) = 0.0336, P > 0.05 ; Diastolic, F (3, 304) = 0.034, P > 0.05]

It may be said then, the males and female subjects of any blood group are not showing any distinction for their systolic and diastolic blood pressure. Hence, our null hypothesis is retained.

Null hypothesis 4B$_1$ (H$_0$ 4B$_1$) - There is no significant effect of blood group and age on anxiety of the subjects.
**Results-analysis and discussion** - Results of ANOVA summary table-(5) indicate that the interaction between blood group and age do not significantly affect the anxiety level \(F(3, 304) = 0.095\) of the subjects.

This indicates the fact that in case of only blood group and age, the interaction is not significant for prediction of anxiety level.

**Null hypothesis 4B₂ (H₀ 4B₂) - There is no significant effect of blood group and age on locus of control of the subjects.**

**Results analysis and discussion** - Results of ANOVA summary table-(6) indicate that the interaction between blood group and age do not significantly affect the orientation towards externality or internality of the subject \(F(3, 304) = 0.025\).

This indicate that the interaction of blood group and age does not affect the I-E locus of control of the subjects of this samples only. Hence our hypothesis 4B₂ is not rejected.

**Null hypothesis 4B₃ (H₀ 4B₃) - There is no significant effect of blood group and age on blood pressure (systolic and diastolic) of the subjects.**

**Results-analysis and discussion** - Results of ANOVA summary table-(7&8) reveal that the interaction between blood group and age does not affect significantly the blood pressure (systolic and diastolic). [systolic, \(F(3, 304) = 0.033\); diastolic, \(F(3, 304) = 0.012\)] of the subjects.

This indicate the fact that in case of only blood group and age, the interaction is not significant for prediction of blood pressure (systolic and diastolic) of the subjects of this specific sample only. Hence our hypothesis 4B₃ is not rejected.
**Null hypothesis 4C₁ (H₀ 4C₁)** - There is no significant effect of interaction between sex and age on anxiety of the subjects.

**Results analysis and discussion** - Results of ANOVA summary table-(5) show that the interaction between sex and age is not significant for anxiety \( [ F (1, 304) = 0.004 ] \) of the subjects. In this way it may be said that whether the subject is old adult or young adult, male or female, his / her level of anxiety is not affected by that. Hence, our hypothesis 4C₃ is not rejected.

**Null hypothesis 4C₂ (H₀ 4C₂)** - There is no significant effect of interaction between sex and age on locus of control of the subjects.

**Results analysis and discussion** - Results of ANOVA summary table-(6) indicate that the interaction between sex and age is not significant for locus of control \( [ F (1, 304) = 0.00 ] \) of the subjects.

In this way it may be said that whether the subject is old adult or young adult, male or female, his / her locus of control is not affected by that. Hence, our hypothesis 4C₂ is retained here.

**Null hypothesis 4C₃ (H₀ 4C₃)** - There is no significant effect of interaction between sex and age on blood pressure of the subjects.

**Results analysis and discussion** - Results of ANOVA summary table-(7&8) indicate that the interaction between sex and age is not significant for blood pressure [systole, \( F (1, 304) = 0.0124 \); diastolic, \( F (1, 304) = 0.022 \)] of the subjects.
In this way it may be said that whether the subject is old adult or young adult, male or female, his / her blood pressure is not affected by that. Hence, our hypothesis 4C3 is not rejected.

**Null hypothesis 4D1 (H0 4D1) -** There is no significant effect of interaction among Blood group × sex × age on the anxiety of the subjects.

**Result-analysis and discussion** - Results of ANOVA summary table-(5) reveal that the interaction among all the three independent variables are significantly affecting anxiety [F (3, 304) = 47.245, P < 0.01].

It may be concluded that the combined effect of all the three dependent variable is significant for anxiety level of the subjects. But when any one of the three independent variables was kept constant, the effect became insignificant. Hence our null hypothesis 4D1 is rejected and an alternative hypothesis may be proposed -

**Alternative hypothesis 4D1(H04D1) -** There is significant effect of interaction among blood group × sex × age on the anxiety of the subjects.

**Null hypothesis 4D2 (H0 4D2) -** There is no significant effect of blood group × sex × age on the locus of control of the subjects.

**Results analysis and discussion** - Results of ANOVA summary table-(6) indicate that the interaction among all the three independent variables is significantly affecting locus of control [F (3, 304) = 26.44, P < 0.01] of the subjects.

It may be concluded that the combined effect of all the three independent variables is significant for locus of control of the subjects. But when any one of the three independent variables was kept constant, the effect became insignificant.
Hence, our null hypothesis 4D₂ is rejected and an alternative hypothesis may be proposed -

**Alternative hypothesis 4D₃ (Hₐ4D₃)** - There is significant effect of interaction among blood group \( \times \) sex \( \times \) age on the locus of control of the subjects.

**Null hypothesis 4D₃ (H₀4D₃)** - There is no significant effect of blood group \( \times \) sex \( \times \) age on the systolic and diastolic blood pressure of the subjects.

**Result-analysis and discussion** - Results of ANOVA summary table-(7&8) indicate that the interaction among all the three independent variables are significantly affecting blood pressure [systolic, \( F (3, 304) = 17.232, P < 0.01 \); diastolic, \( F (3, 304) = 14.612, P < 0.01 \)] of the subjects.

It may be concluded that the combined effect of all the three independent variables is significant for both systolic and diastolic blood pressure. But when any one of these independent variables was kept constant, the effect became insignificant.

Hence, our null hypothesis 4D₃ is rejected and an alternative hypothesis may be proposed -

**Alternative hypothesis 4D₃ (Hₐ4D₃)** - There is significant effect of blood group \( \times \) sex \( \times \) age on the systolic and diastolic blood pressure of the subjects.
CHAPTER V

RESULT- ANALYSIS

&

DISCUSSION

PART II
[PART-II]

(RELATIONSHIP AMONG DIFFERENT VARIABLES)

Null hypothesis 5 ($H_0$ 5) - There is no significant relationship among the following variables -

A — Blood group with Anxiety / Locus of control / Blood pressure.
B — Sex with Anxiety / Locus of control / Blood pressure.
C — Age with Anxiety / Locus of control / Blood pressure.
D — Anxiety with locus of control.
E — Anxiety with blood pressure
F — Locus of control with blood pressure.

Null hypothesis 5A₁ ($H_0$ 5A₁) - There is no significant relationship between blood group and anxiety.

Result-analysis and discussion - On the basis of the mean scores of anxiety tests, it was found that the subjects of blood group B are having highest level of anxiety (MBG ‘B’ = 26.40) and subjects of blood group A are having lowest level of anxiety (MBG ‘A’ = 15.09). Subjects of blood group ‘O’ and AB are found having average level of anxiety. According to the norm table given in the manual, those subjects were sorted out, who were possessing extremely high level of anxiety. Percentage were calculated and it was found that in blood group A the percentage was 0 (Zero), in blood group ‘O’ only 10% males and female subjects were having extremely high level of anxiety, in blood group AB 15% subjects were having extremely high level of anxiety. But in blood group ‘B’ 60% female and 25% male subjects were having extremely high level of anxiety. This show a
clear-cut relationship of blood group with the level of anxiety. In medical field ‘B’ blood group people are always called anxiety and depression prone people.

Thus our null hypothesis 5A is rejected on the basis of the results of percentages given in table-(10), and an alternative hypothesis may be proposed -

**Alternative hypothesis 5A₁ (H₀ 5A₁)** - These is a significant relationship of blood group with the level of anxiety.

**Null hypothesis 5A₂ (H₀ 5A₂)** - There is no significant relationship of blood group with locus of control.

**Result-analysis and discussion** - In order to find out the relationship of blood group with locus of control, a comparison of mean scores of all the groups was done. It was found that subjects of blood group B were inclined towards externality (M = 9.52), while the subjects of blood group ‘A’ were found to be more internally controlled (M = 6.87). For further intensive study, percentage of external subjects of all the blood groups were calculated. As shown in table-(2) it was found that there is no significant relationship exist between blood group and locus of control. Locus of control was rather found related to age and sex quite strongly as shown in table-(2) and figure-(7&8) most of the females, especially old adult females of all the blood groups are having external control in comparison to their male or young counterparts.

Hence, our hypothesis 5A₂ is retained, since no relationship is evident between blood group and locus of control.

**Null hypothesis 5A₃ (H₀ 5A₃)** - There is no relationship of blood group with blood pressure (systolic and diastolic both).
Result – Analysis & Discussion

Result-analysis and discussion - Although, mean scores of all groups were in normal range of systolic blood pressure as shown in table-(3), elderly male and female subjects of blood group B & AB were found inclined towards higher level of systolic blood pressure respectively (MBG ‘B’ = 125.87, MBG ‘AB’ = 124.06). Subjects of blood group A were found having lowest mean score of systolic blood pressure (MBG ‘A’ = 119.06). Results are found the same in case of diastolic blood pressure as shown in table-(4). All the 320 subjects are having normal blood pressure but males and females of blood group B and AB respectively are found to have moderately high level of diastolic blood pressure. Subjects of blood group A are again found to be at the lowest amongst all (MBG ‘A’ = 78.69). But in the absence of significant results it is wise to conclude that our hypothesis 5A$_3$ is retained and no significant relationship was found between blood group and blood pressure of the subjects. It may be possible that if we increase the number of subjects or if we take subjects from a wide population, this hypothesis may be rejected. But for this specific sample no relationship between the two variables was found.

Null hypothesis 5B$_1$ (H$_0$ 5B$_1$) - There is no significant relationship between sex and anxiety.

Results - analysis and discussion - In order to find out the relationship of sex with all the three dependent variables, Biserial Correlation Coefficient ($r_{bis}$) was calculated. The coefficient between sex and anxiety is ($r_{bis}$ = -0.049). This coefficient shows a negligible and negative correlation between sex and anxiety. It may be concluded that male and female subjects possess the similar level of anxiety. Hence our hypothesis 5B$_1$ is retained.
Null hypothesis $5B_2$ ($H_0 5B_2$) - There is no significant relationship between sex and locus of control.

**Result-analysis and discussion** - The Bi-serial correlation coefficient between sex and locus of control is ($r_{bis} = -0.0674$). This shows that there is no significant relationship exists between the two variables hence our hypothesis $5B_2$ is also retained.

Null hypothesis $5B_3$ ($H_0 5B_3$) - There is no significant relationship between sex and blood pressure (systolic, diastolic both).

**Result-analysis and discussion** - It is generally believed that females are more prone to high blood pressure than males. The logic behind this belief is connected to social, cultural and economic reasons here in India. It is believed here that from their childhood females have to tolerate bitter experiences, suppress their emotions and sacrifices their desires for other family members. But if the whole causes for high blood pressure are being considered various factors are also be found belonging to males also as smoking, alcoholism high aggressiveness, hiding and suppressing the emotions, high responsibility factor etc. Therefore, it is needed to reinvestigate that whether there is any correlation of sex with high blood pressure since social cultural and emotional circumstances are in a stream of change now a day. To tolerate higher exploitation and to sacrifices their desires for others is not remained a compulsion now, while intake of alcohol, and smoking is taken as a fashion now a days, especially in males. These changing trends are certainly affecting the epidemiology of high blood pressure in males and females.

The coefficients of correlation between sex and systolic blood pressure ($r_{bis} = 0.0786$), and for diastolic blood pressure ($r_{bis} = 0.1035$), are not significant. Hence, it may be concluded that blood pressure is not related to sex, especially in the cases of the subjects of this specific sample. Hence, our hypothesis is retained.
Null hypothesis $5C_1 (H_0 \ 5C_1)$ - There is no significant relationship of age with anxiety of the subjects.

Results-analysis and discussion - The coefficient of correlation between age and anxiety ($r = 0.0086$), which indicates that there is no relationship between the two variables. Anxiety may occur to any person irrespective of his age and sex. Hence, our hypothesis is retained stating that there is no significant relationship between age and anxiety.

Null hypothesis $5C_2 (H_0 \ 5C_2)$ - There is no significant relationship of age with locus of control of the subjects.

Results-analysis and discussion - The coefficient of correlation between age and locus of control is also 0.00816, which is not significant and carries the same results that age is not in anyway correlated with locus of control relationship. Hence, our hypothesis is also retained.

Null hypothesis $5C_2 (H_0 \ 5C_2)$ - There is no significant relationship of age with blood pressure (systolic & diastolic, both).

Results-analysis and discussion - The coefficient of correlation between age and blood pressure are 0.0396 (systolic) & 0.0309 (diastolic). Both the coefficients are negligible and show an insignificant relationship between the two variables, Hence, our hypothesis is retained.

Null Hypothesis $5D (H_0 \ 5D)$ - There is no significant relationship between anxiety and locus of control.
Results-analysis and discussion - The constructs of locus of control and anxiety may both be viewed in relation to personality trait and situational variables. As a personality trait, locus of control (Rotter, 1966) describes individual differences in tendencies to perceive reinforcement across a variety of situations as under personal control (internal) or the control of external forces such as luck, cancer, or fate, with trait anxiety (Speilberger, 1966). It refers to individual difference in the tendency to respond to situations perceived as threatening with anxiety elevations. Viewed in relation to situational stimuli locus of control may be used to describe the amount of control available within the structure of a specific situation, whereas anxiety may be conceptualized as a transitory emotional reaction to a stressful situation or event.

Studies reporting the relationship between anxiety and locus of control are conflicting. Feather & Watson have observed locus of control to be independent of anxiety. They proposed that the anxiety scales and the LC scale are measuring conceptually separate variables which correlate with each other and that this correlation is not due to a hidden anxiety factor within the locus of control scale (Feather, 1967; Watson, 1967). Some researchers, however, have found a significant negative relationship between locus of control and anxiety (Butterfield, 1964; Mink, 1976). In addition, other investigators (Ray and Katahn, 1968; Nowicki, 1972) report a significant positive relationship between internal-external measures of locus of control and tests of anxiety. Although, studies conducted in Western societies are numerous, they are not generally comparable with one another as they differ in several respects, including research design, sampling and instruments of data collection. Moreover, there is a lack of dependable studies in this area focusing on the Indian socio-cultural context.

In order to find out the relationship of anxiety with locus of control, Pearson’s product moment correlation by Scatter Diagram method was calculated. The results are given in table-(9c). The co-efficient of correlation between anxiety and locus of control (r = 0.376) is significant at 0.01 level of significance. This
shows the strength of relationship between the two variables. Positive correlation between the two variables indicates that high anxiety subjects have external locus of control. Internally controlled subjects were found to be low in their level of anxiety because they believe that they can control and change the environment.

The findings are supporting to the findings of some previous studies conducted in western societies (Ray and Katahn, 1968; Nowicki, 1972) and in India (K.P. Krishna, 1981), in which positive relation was found between locus or control and anxiety.

These results are, however, not supporting to the results of Feather, (1967) who found the lack of association between anxiety and locus of control.

The results are contradictory also for some previous studies as, Butterfield (1964) and mink (1976) found a significant negative relationship between locus of control and anxiety.

**Null hypothesis 5E (H₀ 5E)** - There is no significant relationship between anxiety and blood pressure.

**Result-analysis and discussion** - Studies looking for the relationship between anxiety and blood pressure have not verify to each other. Spielberger (1966) proposed that anxiety is an important factor for determining essential hypertension, which has a special role in the assistive processes of the human organism.

But, in a chain, to find out the correlation between blood pressure and trait anxiety, the findings of three studies were not favorable at all; (Glass, Lake Contra, Kheoe & Erlanger, 1983; Balshan, 1962; Smith, Houston and Jurawsipi, 1984).

Again, in a study of Katri Rajkonen et al. (1999) it was found that the individual with high scores on the Spielberger Trait Anxiety Inventory had
significantly higher averages of systolic blood pressure and diastolic blood pressure levels than individuals with low scores. Markovitz suggested in this sequence, that the persistent elevations of BP and emotional responding of anxious individuals might lead to future hypertension (Markovitz et. al., 1991, 1993).

In order to find out the relationship between anxiety and blood pressure, Pearson’s Product Moment Correlation by Scatter Diagram Method was calculated.

The correlation of anxiety with systolic blood pressure and diastolic blood pressure was computed separately. The coefficient of correlation between anxiety and systolic blood pressure $r = 0.263$ and diastolic blood pressure $r = 0.245$, was found significant at .01 level of significance, as shown in table-(9c). Positive correlation between the two variables indicates that high anxious subjects have higher blood pressure in comparison to low anxious subjects. It may also be said that persons who have high blood pressure usually have high anxiety level.

These results are supporting to the findings of Speilberger (1966) and Karti Rajkonen et al. (1999), in which it was suggested that anxiety might play an important role in creating high blood pressure.

But, these results are contradictory to the results of Eric J. Bailey (1984; Glass, Lake Contra, Kheeoe & Erlanger, 1983; Balshan, 1962; Smith, Houston and Jurawspi, 1984), in which no relationship was found between the two. But it was also discussed by Bailey, that although no significant correlation was found between anxiety scores and blood pressure, data indicated that the lack of association between blood pressure and anxiety probably reflects the small size of the group studied, and if the groups demographic variables exhibited greater variability, the differences of anxiety scores and blood pressure would be more evident.
It may be suggested in the light of these results, that further studies about relationship between anxiety and blood pressure are needed. For that, an alternative hypothesis may be suggested -

**Alternative hypothesis 5E (H₁ 5E)** - There is a significant relationship between anxiety and blood pressure.

**Null hypothesis 5F (H₀ 5F)** - There is no significant relationship between locus of control and blood pressure (systolic & diastolic, both).

**Result-analysis and discussion** - The results of product moment correlation coefficient show that there is a significant and positive relationship between locus of control and blood pressure. The coefficients are \( r = 0.299, p < 0.01 \) for systolic and \( r = 0.249, p < 0.01 \) for diastolic). The positive correlation reveal the fact that externally controlled subjects are having high blood pressure in comparison to those subjects who have internal locus of control. Thus our null hypothesis 5F is rejected and an alternative hypothesis may be proposed -

**Alternative hypothesis 5F (H₁ 5F)** - There is a significant and positive relationship between locus of control and blood pressure of the subjects.

These results are contradictory to the findings of Wemmerholm et al. (1976) who compared high blood pressure patients with normal patients in locus of control and anxiety. High blood pressure subjects appeared to be more sensitized, distressed and anxious than the other groups. The groups did not differ in locus of control, however.

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