We now attempt an assessment of the role of formal communication (counselling) offered by the professional counsellors leading to the change in the patient's position in different situations and his interactions with in the family, neighborhood, workplace and within himself; together with an assessment of the role of information reaching the patients and the society at large from sources other than formal counselling. Information was collected with regard to the position of patients from both control as well as experimental groups, before and after the treatment, and with and without communicational interventions. While the behavioural changes (change in the patient's behaviour during the two stages), in the case of the control group may be attributed to the effect of non-formal communication in the family and social network, the behavioural change occurring among the experimental group of patients is attributed to the impact of formal interpersonal communication (counselling) from the counsellors, along with the non-formal communication taking place within the family and the social network. After working out the percent change ($p$) in the two groups independently ($p_1$ in control group and $p_2$ in experimental group) the significance of the variation between $p_1$ and $p_2$ has been tested using the Normal Deviate test ($Z$). Thus the additional contribution of counselling on the behavioural change in each category is established. The details of the situations in which the change in patient's interaction has been established are as follows.
RELATIVE ROLE OF FORMAL COUNSELLING AND NONFORMAL COMMUNICATION ON PATIENT'S INTERACTION:

Patient’s interaction in various situations of both groups at both stages has been observed, the differences are noted and changes in the two groups are presented:

A. FAMILY INTERACTION:

1. Whether the patient conveyed the fact of affliction to the family members: At the time of baseline data collection, it was found that 48.7% and 58.3% among the patients of control group and experimental group respectively had already informed about their suffering to their family members. At the time of evaluation which followed a period of treatment after baseline study 88.9% and 94.4% from control and experimental groups respectively informed their disease to their family members. It shows that the presence of the disease was not informed to the family members by the patients at the time of diagnosis. By the time of collection of evaluation data, however, the information had been conveyed to the family members. In this regard the control group was ahead of the experimental group. There is a significant variation between the change in control group \((p_1 = 81.33)\) and experimental group \((p_2 = 61.9)\) at \(Z = 3.793\), which explains that the change in the attitude to share the fact of infliction with the family members is significantly higher in the control group than that in the experimental group. In other words, more control group patients disclosed the diagnosis to their family members than those of the experimental group. The control group patients, without the benefit of counselling, made the family know of their affliction at the earliest opportunity whereas those in the counselled group kept the
information away from the family. The reason is that those in the counselled group naturally came to know that treatment would cure them. So there was no need to be panicky or spread the panic to the family. In the absence of this confidence those in the control group, they rushed to the family to share the state of panicky with other family members (Table - 5.1).

Again the patients, at the time of baseline data collection, were asked to whom and how many in the family they informed. It is noticed that 6.8% among control group all the family members were informed by them whereas the figure is 19.0% in the experimental group. But by the time of evaluation, the gap between the two groups had narrowed down considerably. Chi square test shows no significant association in the case of the control group while there is a significant association in the experimental group, at P = 0.01, which also means that while a definite influence of formal counselling in deciding as to whom and how many among the family members the disease may be shared by the patient, there is no influence of communication from sources other than formal (Table- 5.2).

2. Isolation in the family: With regard to the question whether the patient was kept isolated in the family, it was found that 2.6% and 5.6% respectively from control and experimental groups were kept isolated initially, which changed to 10.4% and 0.7% in the two groups respectively. It shows that the number of patients found isolated in the family increased in the case of the control group as only nonformal communication was available to them (p1 = -8) where-as those isolated decreased in experimental group,
obviously due to the impact of formal counselling (p2 = 5.147). The normal test shows a significant variation between p1 and p2 at Z = 4.6. This explains the positive influence of counselling on the behaviour of the patients and their family members with regard to avoiding isolation of the patient in the family (Table-5.3).

3. Patient’s relationship with spouse: Status of the patient’s relationship with spouse after knowing the fact of being afflicted by leprosy was enquired. As reported by the respondents they were categorized into two groups i.e. good/better\(^6\), and Not good/worse\(^7\). At the time of baseline data collection, it was found that 88.9% and 97.6% of respondents in the control and the experimental groups respectively, had good relationships with the spouses, even after knowing about the disease. The position changed to 92.2% and 98.8% respectively at the time of evaluation. Though there is a change in control group due to non-formal communication at p1 = 3.75, and no change in experimental group due to counselling at p2 = 0.0, the normal test shows no significant variation between p1 and p2 at Z = 1.875. This indicates that the impact of formal counselling on the patients’ relationship with their spouses is negligible(Table -5.4).

4. Patients’ relationship with other relatives: Patients’ relationship with their relatives was investigated and found that 95.9% and 98.6% of the patients in the control and the experimental groups respectively were not distanced by their relatives at the time of...
baseline data collection. This decreased to 94.2% and 97.3% respectively in both the groups at the time of evaluation data collection, indicating roughly 1% change. Chi square test also shows no significant variation between the initial stage and the evaluation stage in either of the groups. It can thus be concluded that neither nonformal communication nor formal counselling could help the patients to improve their relationships with their relatives (Table - 5.5).

5. Patient considered 'inferior' in the family: It was investigated, before as well as after intervention, whether the family members consider the patient having an inferior status owing to the disease, during their routine interaction. From the point of view of the patients' perception, 2.6% and 1.4% of the sample in the control and the experimental groups respectively, were considered ‘inferior’ by the family members, at the initial stage. While the condition remained the same even at the time of evaluation in the case of the control group (P1 = 0.0), it rose to 2.1% in the case of the experimental group (P2 = 50), and the difference between p1 and p2 is significant at Z = 12.5. This shows a negative impact of the formal counselling (Table-5.6).

6. Finding fault with the patient: It was investigated whether the family members often find fault with the patients, indicating an expression of hatred. At the time of baseline data collection there were 4 patients (2.6%) in the control group and no patient in the experimental group who reported that the family members often found fault with them. The situation remained the same in both the groups till the time of evaluation, explaining that there was no
impact either of non formal communication or of formal counselling. In fact, the impact of counselling could not be verified as there were no cases needing counselling on this aspect (Table-5.7).

7. Abusing the patient by the family members: The Patients were asked whether they were abused by their family members. It was found that 2.6% in the control group and 1.4% in the experimental group were found abused by the family members at the time of baseline data collection, which changed to 4.6% and 0.7% in the control and experimental groups respectively, by the time of evaluation. The increase in the number abused in the control group (p1 = 75) (with only nonformal communication) and decrease in the same in the experimental group (p2 = -50) due to formal counselling, and the significant difference between p1 and p2 at Z = 23.00, explain the positive impact of counselling on the behaviour of the patient and the family members. In other words, there has been considerable improvement in the coping of the patients' family due to counselling (Table 5.8).

8. Sharing food with patients: On the question, whether the family members avoid sharing food with the patient, it was found that a very great proportion of patients, 96.8% in the control group and 97.2% in the experimental group, had not been avoided during the baseline data collection. This changed to 91.5% and 99.3% in the control and experimental groups respectively by the time of evaluation, showing a deterioration of the situation in the control group (p1 = -6.04), and a positive change (p2 = 2.14) in the experimental group indicating a significant variation between p1 and p2 at Z = 3.608. This shows an adverse impact of nonformal
communication and a positive impact of formal counselling as regards sharing of food in the family (Table-5.9).

9. Using house-hold articles: Patients' response about objections from family members regarding using of house-hold articles by the former was enquired, and it was found that 96.8% and 97.9% of the patients from the control and experimental groups respectively were not prevented from using house-hold articles, initially. It changed to 91.5% and 97.2% in the two groups respectively by the time of evaluation. Though the number of patients being prevented increased in both the groups, the negative change in case of control group is much higher (p1 = -6.04) than that of the experimental group (p2 = -0.70) and the difference between p1 and p2 is significant at Z = 2.61. This explains the possible negative impact without formal communication in the case of the control group, and the positive effect of counselling in the experimental group, with regard to allowing the patients to use house-hold articles used by others in the family (Table-5.10).

10. Participating in family functions: It was found that 96.1% patients in the control group and 98.6% in the experimental group were allowed to participate in the family functions and rituals at the time of base line data collection. This number dropped to 94.1% and 96.5% in the control and experimental groups respectively by the time of evaluation. The change is negative in both the groups (p1 = -2.7 and p2 = -2.11) and the variation between p1 and p2 is not significant. It means that the situation deteriorated as more and more people came to know of the affliction, in both the groups. However, there has been no
positive impact of counselling on the behaviour of family members with regard to allowing the patients to participate in family functions and rituals (Table-5.11).

11. Free mixing of family members: Almost all the families of the sample (96.1% in control group and 99.3% in experimental group) allowed free mixing of the patient with other family members, as per the base line data. The evaluation data on the other hand show a deterioration of the situation in both the control (88.9%) and experimental (96.5%) groups, but the deterioration is more in the control group (p1 = -8.11) and less in the experimental group (p2 = -2.8). The variation between p1 and p2 is significant at Z = 2.047, which explains the advantage of formal counselling in preventing deterioration of family interactions. It may be observed that as the family members come to know about the disease gradually, their attitude too tend to change. Formal counselling has, however, prevented clouding of the minds of both the patients and the family members in the case of the experimental group (Table-5.12).

12. Patients' sleeping place in the family: It was enquired whether the patient was allowed to sleep in the same place where he used to sleep before being afflicted by leprosy. It was found that 95.4% and 98.6% in the control and experimental groups respectively, allowed the patient to sleep in his old sleeping places initially. The number came down to 90.8% in the case of the control group and remained the same in the experimental group during evaluation. The variation between p1 (-4.79) and p2 (0.0) is significant at Z = 2.77, which explains deterioration in the control group as a
result of normal nonformal communication, but no change (prevention of deterioration) in the experimental group due to formal counselling (Table - 5.13).

13. Patients bedding kept with others’ : On the question whether patient’s bedding was kept with others’ after knowing of the disease, it was found that 4.6% in the control group and 1.4% in the experimental group were not allowed to keep their bedding with others’ in the family initially. By the time of evaluation the situation deteriorated to 13.1% in the case of the control group and 2.8% in the experimental group. Though the deterioration is found in both the groups, it is more in the control group (p1 = -8.9) than that of the experimental group (p2 = -1.42), and the difference is significant at Z = 3.09. Thus the positive impact of formal counselling in preventing deterioration was not found in the nonformal family set-up (Table - 5.14).

14. Washing of patient’s clothes : It was enquired whether family members wash/refuse to wash patients’ clothes. It was found that the family members of 2.6% and 0.7% respectively of the patients from the control and experimental groups did not like to wash the patients’ clothes. This number rose to 3.9% in the case of the control group and remained the same (0.7%) in case of the experimental group. Though there is negative change in the control group (p1 = -1.36) the variation between p1 and p2 is not significant, which explains no impact of nonformal or formal communication on the behaviour of the family members in this regard. (Table - 5.15).
15. Washing patient’s utensils: Whether the patient’s family members refuse to wash utensils used by the patients, was another inquiry. It was found that the family members of 2% and 0.7% of the patients from the control and the experimental groups respectively refused to do so at the time of baseline data collection. This changed to 4.6% and 0% in the control and experimental groups respectively by the time of evaluation. Deterioration of situation in terms of higher proportion of refusal in the case of control group ($p_1 = -2.74$) and no refusal ($p_2 = 0.7$) in the case of experimental group, and significant variation between $p_1$ and $p_2$ at $Z = 2.32$ explain the positive impact of formal counselling in neutralizing the effect of nonformal communication (Table-5.16).

16. Patient’s bathing place: It was enquired whether patient was allowed to take bath, in the common bathing place of the family members when it was found that a small proportion of 2.6% in the control group and 0.7% in the experimental group was not allowed at the time of collecting baseline data. The position changed to 0.7% in the case of both the groups by the time of evaluation. Though there is a definite positive change in the case of control group ($p_1 = 2.01$), and no change ($p_2 = 0.0$) in the case of the experimental group, the difference between $p_1$ and $p_2$ is not significant. The results show that there is no impact either nonformal communication or of formal counselling (Table - 5.17).

17. Cooking of the patient’s food: It was enquired whether the patient was asked by the family members to cook separately and was found that 3.3% and 0.7% of the patients from the control
and experimental groups respectively were asked to cook their food separately at the time of base line data collection. However, it came down to 2.0% and 0.0% respectively by the time of evaluation showing $p_1 = 1.35$ and $p_2 = .7$ and the variation between $p_1$ and $p_2$ is also not significant. This shows that formal counselling has not played any significant role and that there may be some other factors of nonformal communication which had brought about positive change in the behaviour of family members of the control group (Table - 5.18).

B. PATIENT’S INTERACTION WITH SOCIETY:

1. Are the co-villagers aware of the patient’s disease: It was enquired whether the patients’ neighbours and other villagers were aware of their disease. It was found that as many as 5.8% and 6.8% from the control group and the experimental group respectively were aware of it at the time of the base line data collection. By the time of evaluation, the number knowing the disease went up to 21.6% and 17.1% respectively. While, informing of their disease to the neighbourhood need not necessarily be a sign of adjustment, patient’s attitude towards sharing his problem without any hesitation with neighbourhood may be treated as a sign of adjustment. Such change towards sharing with neighbourhood is more in control group($p_1 = 266.67$) and comparatively less($p_2 = 150$) in experimental group. And the variation between $p_1$ and $p_2$ is significant at $Z = 6.346$, which indicates that nonformal communication in the absence of formal counselling had brought about greater change in terms of making the community members aware of the disease. As it happened in case of the
family, the control group patients in the absence of confidence created by counselling rushed to their community members to share of their disease (Table-5.19).

2. Patient visiting the village temple: It was enquired from the patients whether they were prevented from visiting the village temple. It was found at the time of baseline data collection that there was only one patient in the control group who was prevented and no patient in the experimental group. By the time of evaluation also the situation remained exactly the same in both the groups ($p1 = 0$ and $p2 = 0$), showing no impact either of nonformal communication or formal counselling (Table-5.20).

3. Patient using common well: It was enquired whether patients were prevented from using common village well, and was found that a small proportion of 1.3% in the control group and 0.7% in the experimental group were prevented by the villagers, at the time of baseline data collection. This number came down to 0.6% and 0.0% in the control and experimental groups respectively. There is also no significant variation between change in the control group ($p1 = 0.65$) and the experimental group ($p2 = 0.0$), which explains the fact that there is no added influence of either nonformal communication or formal counselling on the patient's adjustment in this regard (Table-5.21).

4. Patient using water tank: Similarly in the case of using village water tank, it was found that a small proportion of 1.3% patients in the control group and 0.7% in the experimental group were
prevented from using it at the time of baseline data collection. This percentage was reduced to 0.6% and 0% by the time of evaluation in the control and experimental groups respectively. There is also no significant variation between the change in the control group ($p_1 = 0.65$) and the experimental group ($p_2 = 0.0$), which demonstrates that there was no added influence of nonformal communication or formal counselling on the patient's adjustment in this regard (Table - 5.22).

5. **Patient attending common feasts in the community:** Whether the patient was allowed to attend common feasts of the community was another question put to him, and was found that 4.5% and 1.4% of the patients from the control and experimental groups respectively were not allowed, at the time of baseline data collection. This rose to 5.8% in the case of the control group and fallen to 0% in the case of the experimental group patients by the time of evaluation. There is also no significant statistical variation between the change in control group($p_1 = -1.35$) and experimental group ($p_2 = 0.69$), which shows no added influence of either nonformal communication or formal counselling on the patient's adjustment in this respect (Table-5.23).

6. **Patient's participation in social functions:** It was enquired whether patients were allowed to participate in social functions of the village and was found that a small proportion of 1.9% in the control group and 0.7% in the experimental group were not allowed to, at the time of baseline data collection. This proportion rose to 7.1% in the case of the control group and
remained the same (0.7%) in the experimental group by the time of evaluation. There is also a significant variation at $Z = 2.93$ between the change in the control group ($p1 = -5.26$) and the experimental group ($p2 = 0.0$). The positive impact of formal counselling in preventing the negative change taken place in control group as a result of the nonformal communication has thus been established (Table-5.24).

7. Patient shares Bidi* with others: The smokers among the patients were asked whether they share bidi with others in the community. Only 1.6% of them from the control group stated to share bidi with other friends. While the situation remained the same in the experimental group, the number of bidi smokers with no opportunity to smoke with friends rose to 17.3% by the time of evaluation. It shows increased maladjustment among the patients of the control group inspite of nonformal communication where as it was prevented to some extent due to formal counselling in the experimental group(Table-5.25).

8. Patient shares Hukka† with others: It was observed that 2.3% and 0% patients from the control and the experimental groups respectively had no opportunity to share Hukka with others at the time of base line data collection. The situation, however, changed to 26.5% and 7.4% respectively at the time of evaluation. It shows that the problem has increased in both the groups at different proportions(Table - 5.26).

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* An indigenous produce meant for smoking tobacco, used in the place of cigarette
† An indigenous produce meant for smoking tobacco in a royal way, may be compared with a pipe.
9. Patient taking tea in company with others in the community:
   To the question whether patients have been allowed to take tea together with other community members, it was found that, 1.9% of the control group and 1.4% of experimental group had no opportunity to take tea with other community members, because of the disease, at the time of baseline data collection. By the time of evaluation the number of patients increased to 7.1% in the control group and decreased to 0% in the case of the experimental group. There is also a significant variation between the change in the control group (p1 = -5.3) and to the experimental group (p2 = 0.7) at Z = 3.10, which shows the positive impact of formal counselling as against the deterioration of the situation taking place in the control group without any formal counselling (Table 5.27).

10. Patients' movement in the community: There was only one patient (0.6%) from the control group who was not allowed to move freely at the time of baseline data collection and none in the experimental group. While the situation remained the same in the experimental group, the no. of patients not allowed to move freely in the society rose to 3.9% in the control group by the time of evaluation. A significant variation between the change in the control group (p1 = -3.27) and experimental group (p2 = 0.0) is noticed at Z = 2.437. It proves the positive impact of formal counselling in the experimental group but not in the control group which was subjected to only by nonformal communication (Table - 5.28).
11. **Barber’s services to the patient:** To the question whether the patients were denied of the services of the community barber it was found that 95.8% and 77% of the eligible sample from the control and experimental groups respectively were not denied such services at the time of baseline data collection. This position changed to 96.6% and 100% respectively by the time of evaluation. There is also significant variation between the change in the control group ($p_1 = 0.88$) and experimental group ($p_2 = 3.06$) at $Z = 2.055$, which explains the positive impact of formal counselling in removing apprehensions in the case of the experimental group but not so in the control group (table-5.29).

12. **Priest’s services to the patient:** Whether the community priest denied his services to the patient was another question. Here it was found that only 2 patients (1.3%) from the control group were denied of the services of the priest at the time of baseline data collection, which decreased to 1 (0.6%) by the time of evaluation, whereas the situation in the experimental group remained the same. No significant variation in the change between the control group ($p_1 = 0.65$) and the experimental group ($p_2 = 0$) was also noticed. It shows no impact of formal counselling or nonformal communication (Table-5.30).

13. **Tailor’s services to the leprosy patients:** Similarly it was enquired whether the tailors provided their services to the leprosy patients. Only 3 patients (2.3%) from the experimental group were denied of the services at the time of baseline data collection, which came down to 0 during evaluation. However, though there was none denied of the tailor’s services in the
control group earlier, this number increased to 0.6% at the time of evaluation. It shows a significant variation between the change in control group ($p_1 = -0.65$) and experimental group ($p_2 = 2.1$) at $Z = 2.03$, which also demonstrates the positive impact of formal counselling (Table-5.31).

14. Cobbler’s services to the patient: Again it was enquired whether the village cobbler denied his services to the patients. One patient (0.6%) in the control group and 2 (1.4%) patients in the experimental group were denied at the time of baseline data collection. By the time of evaluation, the position changed to 1.3% and 0.0% in the control and experimental groups respectively. There is also a significant variation between the change in the control group ($p_1 = -0.65$) and experimental group ($p_2 = 2.1$) at $Z = 2.03$. This shows the positive impact of formal counselling in adjusting the community behaviour (table-5.32).

C. PATIENT’S INTERACTION IN THE WORK PLACE: It is often noticed that the leprosy patients face problems related to their employment in their workplace. An attempt was made by the counsellors to identify the communication needs of the sample and to fulfil them through formal counselling either in the Manobal clinic or in the patients’ social environment. As such data on the adjustment levels of the patients of both the control and experimental groups were collected at the time of baseline data collecting as well as evaluation and the findings are presented below:
1. Receiving common facilities from the employer: In the workplace discrimination against leprosy patients is not encouraged. Therefore, it was enquired, whether the patients were sharing all the common facilities allowed to the employees when it was found that no body was denied of any facility in both the groups at the time of baseline data collection. But at the time of evaluation the number rose to 3 (4.5%) and 1 (1.5%) in the control and the experimental groups respectively. The negative change is more in the control group and comparatively less in the experimental group (Table-5.33).

2. Patient’s continuation in the same job: It was enquired from the employed patients as to whether the other employees prevented the patient from continuing in the same job after having known about the disease. It was observed that 1 (1.4%) and 2 (2.8) patients respectively from control and experimental groups were found to be prevented, at the time of baseline data collection. At the time of evaluation the number changed to 3 (4.5%) and 0.0% in the two groups respectively, which shows the aggravation of the problem in the control group and its decrease in the experimental group (Table-5.34).

3. Colleagues partaking food with the patient: It was also enquired at the time of the baseline data collection, whether the colleagues partake food with the patient at the workplace. It was known that in 95.8% and 93.2% of the cases in the control and experimental groups respectively had no hesitation to partake food with the patient. The number changed to 92.4% and 98.5% respectively by the time of evaluation. Which shows
deterioration of the situation in control group and improvement in the experimental group (Table-5.35).

4. Whether patient's colleagues maintain distance with the patient: Whether the colleagues of the patients maintained distance was another question. At the time of baseline data collection it was found that 2 (2.8%) and 3 (4.1%) patients respectively in the control and experimental groups maintained distance. The position changed to 3 (4.5%) and 1 (1.5%) respectively by the time of evaluation showing an improvement in experimental group and deterioration in control group, confirming the impact of formal communication (Table-5.36).

5. Influencing the employer to relieve the patient from job: Another question was whether the other employees tried to influence the employer to get rid of the patients from their jobs, when it was found that there was no such attempt in the case of the sample patients of both the groups at both the stages (Table-5.37).

6. Whether patient faces problems for getting employment: It was enquired whether the patient faces problems, due to leprosy, for finding employment and it was found that 95.6% and 100% in the control group and experimental group respectively faced no problems at the time of baseline data collection. At the time of evaluation there was no case from either the groups faced problems for finding employment (Table-5.38).
D. IMPACT ON PATIENT'S PERCEPTION: As dealt in the introduction, what the patient perceives about leprosy greatly influence the patient’s attitude towards society, his cooping mechanisms and his homeostasis, thus patients perception is one of the areas where counselling is attempted upon. In order to see the impact of counselling on perception, data on the following variables were collected both at the time of baseline data collection and evaluation stage and the results are presented below:

1. Patient’s perception about cause of Leprosy: Patient’s perception regarding cause of leprosy was investigated during baseline data collection and it was found that 91% and 89.7% of the patients from control and experimental groups respectively had no idea. The rest (9% and10.3%), however, knew about the correct cause. At the time of evaluation, it was found that 12.3% and 88.4% from two respective groups knew the correct cause. The appreciable increase in the number of patients in the experimental group is extremely significant. This is also reflected in the variation between the change in control group \( (p1 = 35.71) \) and experimental group \( (p2 = 760) \) at \( Z = 12.33 \), explaining the significant impact of the formal counselling and the positive change in the perception of the patients with regard to the cause of leprosy (Table-5.39).

2. Patient’s perception about infection: With regard to the patients’ perception about infection 38.1% and 38.4% of the patients from the control and experimental groups respectively showed their ignorance at the time of collecting baseline data.
The responses of the rest ranged from infectious, not infectious, infectious at later stage, some types of leprosy are infectious etc. These are all treated as correct for the purpose of this study. As per the evaluation data, 75.5% and 98.6% patients of the control and experimental group respectively gave correct response, while the rest were not aware. There is a significant variation between the change in control group ($p_1 = 21.88$) and experimental group ($p_2 = 60$) at $Z = 7.274$, which indicates the significant impact of formal counselling on the experimental group patients in changing their perception (Table-5.40).

4. Patient's perception about cure of leprosy: The patients were also asked during baseline data collection whether leprosy is curable. The results show that 91.0% and about 83% of patients from the two groups respectively considered that 'leprosy was curable', while the rest of the patients said either 'don't know' or 'not curable' which for the purpose of this study are treated together as not correct. As per the evaluation data, while the number in the control group came down to 86.5%, 98.6% in the experimental group said leprosy was 'curable'. This significant variation between the change in control group ($p_1 = -4.96$) and experimental group ($p_2 = 15.01$), at $Z = 6.51$ explains the positive impact of formal counselling on the patients of the experimental group in this regard (Table-5.41).

5. Patient's perception about effect of leprosy on body: It is also essential for the patient to know that the leprosy is a disease which causes deformity if not treated early, and that there are other implications of the disease on his body. Early symptoms
are often mistaken for skin disease causing mere patches. As such, patient's perception about the effect of leprosy on his/her body was ascertained during the baseline data collection and was found that 41.3% and 37.7% of the control and experimental group patients respectively were aware of the effects. Others did not have much idea about it. Evaluation data, however, show that 55.5% and 87.7% of the two groups respectively did not possess correct awareness. Statistically too, there is significant variation between the change in the control group (p1 = 34.38) and the experimental group (p2 = 132.73) at Z = 14.78, confirming the positive impact of formal counselling on the patient's perception about effect of leprosy on patient's body (Table-5.42).

6. Patient's perception about effect of leprosy on patient's economic activity: Similarly it was expected that the patient should be aware of the repercussions of deformity and it's effect on work and wages. As such it was also assumed that, it should motivate the patient for regular treatment. Therefore, the patients were asked whether leprosy affects their economic activities when it was found, as per the baseline data, that 36.7% and 37.0% respectively of patients from control and experimental groups, realized the effect, while the others had no such apprehension. Evaluation data on the other hand show that while 46.2% in the control group realized the danger, this realization was dawn on a greater number (75%) of the patients in the experimental group. There is also a significant variation between the change in the control group (p = 36.11) and experimental group (p2 = 277.78) at Z = 12.86, denoting greater
positive impact of formal communication on changing the perception of the patients in this regard (Table-E.43).

7. Patient’s perception towards their future: The patients’ perception towards their future was also investigated. During the first stage of data collection 95.5% and 95.2% respectively of patients from control and experimental groups were found to be ‘optimistic’, while the rest were ‘pessimistic’. The position considerably changed by the time of evaluation, as comparatively fewer number of patients in the control group (87.1%) and larger number of patients in the experimental group (98.5%) were found to be optimistic. Significant variation between the change in control group (p1 = -27) and experimental group (p2 = -5.04), at Z = 5.51, is also noticed. Significant positive impact of formal counselling on the perception about the future of the patients is, therefore, obvious (Table-5.44).

E. IMPACT ON PATIENT’S PSYCHOLOGICAL ADJUSTMENT:

Leprosy is a disease, takes its toll of the mental equilibrium of the patient. Assessing the mental condition becomes very essential in the process of counselling as what the patient is communicated and what the patient communicates to himself determine the mental configuration of the patient. To ascertain this, certain psychological tests were conducted in both the groups and following are the results:

Anxiety: Anxiety being the most important outcome, investigations were made to know whether the patients were suffering from anxiety on account of cure of the disease, future of
the family including children’s marriages, possibility of one’s divorce etc.

**Anxiety about cure:** It was found during baseline data collection that 56.1% and 60.7% of the patients from control and experimental groups respectively were suffering from anxiety about cure of their disease. The positive effect of counselling to fight their anxiety is clearly demonstrated when, at the time of evaluation, the percentage decreased to 21.9% among the experimental group, and increased to 67.6% in the control group. A chi square test was applied and found it confirms a significant variation (between the two stages) in experimental group at $P=0.001$, suggesting the influence of formal counselling in relieving the patients from anxiety about cure of the disease (Table-5.45).

**Anxiety about future of the family:** It was found that 16.2% and 28.5% of patients from control and experimental groups respectively were anxious about the future of their family at the time of baseline data collection. While the percentage increased to 35.5% in the case of the control group, it came down considerably (5.5%) in the case of the experimental group. This is noticed that there is a significant difference in the change of the above situation between the two groups ($p_1=116$ and $p_2=-80.49$) at $Z=41.08$ by the time of evaluation. The positive impact of formal counselling and negative impact of nonformal communication in relieving the patients’ anxiety is obvious (Table-5.46).
Anxiety about future/marriage of the children: Those patients having children keep worrying about the future, particularly of their marriage. It was found that 17.8% and 33.7% of the patients from control and experimental groups respectively suffered from their anxiety at the first instance, because of their main concern that the society might attach social stigma being children of leprosy patients. The situation changed to 40% and 5.3% respectively in the control and experimental groups by the time of evaluation. Chi square test also shows significance at $P = 0.001$, in control group as well as experimental group, explaining the negative impact of nonformal communication on the control group and significant positive impact of formal counselling on relieving the experimental group patients from anxiety related to future and marriages of their children (Table-5.47).

Patient getting angry over trifle matters: Getting angry over trifle matters is one of the profiles of abnormal behaviour often found among leprosy patients who are maladjusted with their social environment. An investigation was made to identify such cases and it was found that 1.9% and 0.7% of the patients from control and experimental groups respectively suffered from such an abnormality, at the time of base line data collection. By the time of evaluation 9.9% and 3.4% of the patients, from control and experimental groups respectively, suffered from this abnormality. The change in both the groups is negative, and the difference in the change between the two groups is equal ($p_1 = 400$ and $p_2 = 400$), which shows no significant additional positive impact of either formal counselling or nonformal communication (table-5.48).
**Marital Anxiety:** Apprehensions of getting divorced by the healthy spouse is observed to be one of the causes of anxiety among leprosy patients. As such, it was investigated as to how many patients suffered from this anxiety. It was found that 6.9% and 6.5% of patients from control and experimental groups respectively suffered from this anxiety at the time of baseline data collection, which changed to 3.9% and 0 respectively at the time of evaluation. There is a significant variation between the change in control group ($p_1 = -42.86$) and experimental group ($p_2 = -100$) at $Z = 11.66$, proving significant impact of formal counselling in reducing the number of cases suffering from this problem in the experimental group (Table-5.49).

**Patient often finds fault with children:** It is another profile of abnormal behaviour often found with maladjusted family members and leprosy patients as well. Efforts were made to identify patients suffering from such abnormality and was found that 3.7% and 1% respectively of the patients from control and experimental group suffered from this abnormality at the time of baseline data collection. By the time of evaluation the number increased to 10.8% among the patients of the control group but reduced to 0% in the case of the experimental group. The change in the control group is negative ($p_1 = 175$) and that of experimental group is positive ($p_2 = -100$), with a significant variation between $p_1$ and $p_2$ at $Z = 24.84$. This confirms a significant positive impact of formal counselling on the experimental group which did not take place with nonformal communication alone in the control group (Table-5.50).
Patient getting easily upset: Getting upset very easily is another profile of abnormal behaviour often found among the patients suffering from anxiety due to various causes, including affliction of anticipated threats due to leprosy.

Attempts were made to identify the patients suffering from such abnormality and was found that 7.1% and 7.5% of the patients from the control and experimental groups respectively were suffering from this abnormality. By the time of evaluation 23.4% and 4.2% of the patients respectively were found with this abnormal profile, an increase in the case of the control group sample and decrease in the experimental group. Statistically too there is a significant variation in the change between the control group \( p_1 = -227.27 \) and experimental group \( p_2 = -45.45 \) at \( Z = 19.114 \), which, therefore, suggests a definite positive impact of formal counselling in relieving the patients from this abnormality in experimental group (Table-5.51).

Patient's interest in attending village functions: Attending village functions by the people predominantly depends on the social environment in the village. But the patient's interest in attending such functions largely depends on the patient's psychological adjustment influenced by personality factors. It was found from the sample that 10.3% and 11.6% of the patients from control and experimental groups respectively were not interested in attending village functions at the time of baseline data collection. By the time of evaluation the situation changed to 19.4% and 7.5% in control and experimental groups respectively. There is a significant variation between the change in control group \( p_1 = -93 \) and
10.07) and experimental group (p2 = 4.65) at Z = 4.94, suggesting significant positive impact of formal counselling on the patient’s psychological adjustment (Table-5.52).

**Patient prefers to stay alone:** Assuming one’s preference to stay alone is one of the abnormal behavioural profiles of the maladjusted, it was enquired as to how many patients prefer to stay alone, instead of mixing with their family members and neighbourhood. At the time of initial data collection 6.5% and 7.5% of the patients from the control group and the experimental group respectively, who are living in their families, preferred to stay alone. By the time of evaluation, the position changed to 10.4% and 6.2% in the two groups, respectively. Also there is a significant variation between the change in the control group (p1 = 60) and experimental group (p2 = -18.18), at Z = 15.43, demonstrating a significant impact of formal counselling in normalizing the patients (Table-5.53).

**Maintaining distance with family members:** Maintaining distance from the family members on his own or withdrawal behaviour of the patients, is a sign of their maladjustment with the family owing to psychological disturbances. This has been investigated when it was found that 4.5% and 4.1% of the patients from control and experimental groups respectively maintained distance from their family members. By the time of evaluation, 11.1% and 3.4% from these groups respectively had this problem. Significant variation has also been found between the control group (p1 = 142.85) and the experimental group (p2 = -16.67) at Z = 22.67, showing a significant impact of formal counselling on
the patients from the experimental group in motivating them for better adjusted with their family members (Table-5.54).

**Patients suspect that others talk ill of them:** Suspicion is another indicator of a disturbed mind. A question was therefore asked to find out how many of the patients suffered from this problem as it is a sign of the patients' disturbed homeostasis. It was found that only 0.6% and 2.1% of the patients in the control and experimental groups respectively had such feelings at the time of baseline data collection. This number increased to 6.5% and 2.7% respectively, by the time of evaluation. The change is negative in both the groups, but it is predominantly so in the control group when compared to the experimental group. Statistically there is a significant variation between the change in control group \( (p1 = 900) \) and experimental group \( (p2 = 33.33) \) at \( Z = 12.206 \). It suggests a positive impact of formal counselling among experimental group patients in terms of preventing the negative change that taken place in the control group patients with regard to patients' homeostasis (Table-5.55).
F. PATIENTS' ADJUSTMENT INDEX: After assessing the patients' adjustment in different situations at both the stages, baseline and evaluation, the patients' levels of adjustment in the assessed situations have been scored and added up to calculate a cumulative score. Thus each patient has been scaled with regard to the indices formulated viz.

i) Family Adjustment Index,
ii) Social Adjustment Index,
iii) Workplace Adjustment Index,
iv) Patient's Perception Index,
v) Patient's Attitude towards Treatment Compliance, and
vi) Patient's Psychological Adjustment Index,

as per the procedure described in the methodology. As per the scoring method adopted, the cumulative scores of each index a patient received ranged from less than 0.0 (-score) to a maximum of 1.00. Such an index for each of the above six areas of patients' interaction have been developed based on the baseline data as well as the evaluation data. The respondents are then categorized into two categories based on the score achieved viz. low adjustment (< 0.05) and better adjusted (0.5 to 1.00) at both the pre and post intervention stages. Using the normal test, difference in the overall change between the control and experimental groups has been ascertained and the results are presented below:

FAMILY ADJUSTMENT INDEX: Results show that the proportion of 'better adjusted (0.5 to 1.0)' category in the control group had changed from 95.5% to 88.4% whereas the same in the experimental group had changed from 97.3% to 95.2%. There is a
significant difference between the extent of change between the control group \( (p_1 = -7.43) \) and experimental group \( (p_2 = -2.11) \), at \( Z = 2.19 \), suggesting positive impact of counselling in preventing deterioration of overall adjustment of the patients of experimental group in the family. (Table-5.56).

There is a deterioration in the mean family adjustment of control group patients from 0.80 to 0.79 whereas the same is improved from 0.84 to 0.89 in case of experimental group patients (Diagram-5.1).

**SOCIAL ADJUSTMENT INDEX:** It is observed that the level of social adjustment of the total sample was lower at the time of evaluation when compared to the baseline data. But the cross tabulation with the study category shows that 96.8% and 97.3% of the patients from control and experimental groups respectively were better adjusted before intervention, which has changed to 92.3% and 99.3% respectively of both the groups by the time of evaluation. In other words, while there was deterioration in the case of the control group, there was better adjustment after formal counselling in the case of the experimental group. There is also significant difference between \( p_1 = -4.66 \) and \( p_2 = -2.11 \) at \( Z = 3.273 \), showing a deterioration among the control group patients who received only nonformal communication and improvement among experimental group patients who had formal counselling with regard to their overall adjustment in their society. (Table-5.57).

In case of control group patients the mean social adjustment declined from 0.73 to 0.71 whereas it improved from 0.73 to 0.75
among those in the experimental group showing a positive impact of formal communication (Diagram-5.2).

**WORKPLACE ADJUSTMENT INDEX:** With regard to workplace also there is a decline in the adjustment level of the patients in both the groups. In the control group the proportion of better adjusted declined from 43.9% to 40% and in the experimental group it declined from 47.3% to 45.2%. The chi square test applied shows no significant variation between the two groups before and after intervention, suggesting no impact of communication either formal or non formal on the workplace adjustment. Normal test shows no variation in the rate of deterioration in both the groups at $Z=1.58$ (Table-5.58). It does not also categorically rule out the effect of counselling as it may be noted that no counselling was tried at the workplace.

Though, the mean workplace adjustment shows a declining trend among the patients of both the control as well as the experimental group, the extent of deterioration is more in the control group (from 0.44 to 0.40) and less in the experimental group (from 0.47 to 0.54). This shows the change for worse is prevention in the experimental group due to formal communication (Diagram-5.3).

**PERCEPTION INDEX:** As per the composite index, at the time of baseline data collection, 10.3% and 16.4% of the patients from the control group and the experimental group, respectively had better perception. But the situation changed to 6.8% and 85.6% in the control and experimental groups respectively at the time of evaluation indicating a positive change in both the groups ($p_1=62.5$ and $p_2=420.8$) and the variation is significant at
Z = 11.69. It means that improvement in the perception is possible, even through nonformal communication without counselling. It also proves that counselling made a significant impact on the patients to improve their perception. Here it may be stated that perception being a personal matter, counselling has made all the difference (Table-5.59).

While there is no change in the mean of the Perception Index of the patients in the control group, the same among the patients of the experimental group improved from 0.2 to 0.6 showing a positive impact of formal counselling (Diagram-5.4).

**ATTITUDE TOWARDS TREATMENT COMPLIANCE:** The patients' responses to the questions pertaining to,

(i) treatment compliance and regularity during their earlier treatment and

(ii) regularity during study period,

have been considered for developing this index. The index based on baseline data was developed only for those who attempted to take some treatment before registering for treatment in the GMLF referral hospital. Only 3.2% and 1.4% of the patients from control and experimental groups had positive attitudes towards good treatment compliance, before intervention. This improved to 79.2% and 95.8% in both the groups respectively at the time of evaluation. Chi square test reveals that

(a) A significant change occurred in both the groups during the study period which proves the positive impact of formal counselling as well as nonformal communication on the patients' attitude towards treatment compliance; and
(b) No significant variation between the two groups at the time of baseline data collection. But there is a significant variation between the two groups at \( P = 0.0001 \) by the time of evaluation which explains a significant advantage of formal counselling over nonformal communication with regard to moulding the patient’s attitude towards treatment compliance.

It may be, however, noted that, 79.2% of the control group respondents, developed better attitude in the absence of counselling, which may not be normally found among the leprosy patients in the society. This exception may be due to the fact that they were defaulters during their earlier treatment elsewhere, and approached the GMLF referral hospital for treatment when faced complications, thus partially motivated by themselves for better treatment compliance (Table 5.60).

Mean Attitude towards treatment compliance also confirms that nonformal communication too could bring positive change in the patients’ attitude towards treatment compliance to the extent of from 0.1 to 0.5, but the similar change is from 0.1 to 0.8 in the experimental group (Diagram 5.5).

**PSYCHOLOGICAL ADJUSTMENT INDEX:** There were 69% and 61% respectively of control group and experimental group patients with high psychological adjustment before treatment, which changed to 38% in the control group and 62% in case of the experimental group. This shows that adjustment among the control group patients deteriorated as the stress due to the disease on the patients increased gradually. In the case of the patients in
the experimental group, however, such deterioration was prevented by counselling inputs. Statistically too there is a significant variation in the change between the control group (p1 = -26.16) and the experimental group (44.94) at Z=13.11, suggesting the negative impact of nonformal communication in the control group and the significant positive impact of formal counselling in the experimental group, on the overall psychological adjustment of the patients (Table-5.61).

It is also noted that there is a decline of Mean Psychological Adjustment from 0.7 to 0.5 in control group and improvement of the same from 0.6 to 0.8 in experimental group (Diagram-5.6).

TOTAL ADJUSTMENT INDEX: The scores achieved by each patient with regard to family adjustment, society adjustment, workplace adjustment, patient's perception and psychological adjustment are pooled and thereafter the patients were arranged in a scale. The results show that 38.5% of the total sample secured a negative score (less than 0.01), 42.2% of the total sample secured between 0.01 and 0.25 and 13.3% secured more than 0.25 and less than 1.0. The cross tabulation of the total achieved score with control and experimental groups shows a significant variation between the two groups as explained by the chi-square test, at P=0.000, with 34.9% of the experimental group patients secured high score where as the same is only 4.5% in the control group (Table-5.63).
It may be observed from a comprehensive picture of the total change (Diagram-5.7) that,

- With regard to Family Adjustment there has been an equal and positive change in both the groups to the tune of <0.1.
- With regard to Social Adjustment there is a slight negative change in the control group whereas there is no change in experimental group.
- With regard to Psychological Adjustment of the patient there is negative change in control group to the tune of .2 and the same is positive to the tune of .1 in experimental group.
- With regard to patients' perception there is no change in control group and there is positive change in the experimental group to the tune of .5.
- There is positive change in both the groups with regard to their attitude towards treatment compliance to the tune of .5 and .8 in control and experimental groups respectively.
- There is negative change in both the groups with regard to their work-place adjustment but the same is more in control group and less in experimental group.
- The total behavioural change calculated based on the above changes, is negative to the tune of .5 in control group and positive to the tune of .5.
PATIENT’S REGULARITY IN TREATMENT: The regularity of a subsample has been followed up till the completion of the treatment and the results are as follows:

Regularity Index (RI): It is noted that Mean RI in control group is 67%, whereas the same in the experimental group is 84% (Diagram-5.8).

Anova shows a significance variation between RI and the study category at $F=0.0001$ (Table-5.65).

Further, the patients were divided into two categories following the WHO criteria of receiving 6 pulses in 9 months, i.e. the patients secured RI $<66.6$ are categorised as irregular and those who secured RI $>66.6$ are regular. It was observed that, 67% of those irregular are from the control group and 33% are from the experimental group. Similarly among those regular, 56% are from the experimental group and 44% are from the control group (Diagram-5.9).

Duration of treatment: Mean of the duration between the 1st month the patient registered for treatment and the last month of treatment has been calculated to explain the duration that a patient is in association before he sought another treatment centre or discontinued the treatment. It was found that the duration of the non-infectious patients is longer (12 months) than that of infectious patients (9 months) in case of control group. This shows that the patients from control group are either discontinued the treatment or approached other treatment centres. In case of
experimental group it is 11 months and 17 months in non-infectious and infectious cases respectively (Diagram-5.10).

**Duration for cure:** Duration of treatment of those patients who completed treatment, i.e., continued till RFT has been studied and it was revealed that the duration for cure is the same (27 months) in both the groups in case of infectious cases and slightly less in the experimental group (12 months) than control group (13 months) in case of the non-infectious patients (Diagram-5.11).

**No. of pulses received:** Mean of the number of pulses received by each patient has been worked out in each group and it is seen that, the number of pulses received in control group is same (8 pulses) in infectious and non-infectious cases, whereas it is 14 and 9 respectively in experimental group (Diagram-5.12).

**Completion of treatment:** It is verified as to how many patients continued the treatment till they were declared RFT by the medical authorities of the referral hospital. The results reveal that 54% of the control group and 74% of the experimental group patients continued the treatment till they were declared RFT. The remaining patients either discontinued the treatment or sought treatment from other treatment centres (Diagram-5.13).
II. FACTORS OF FAMILY/NETWORK COMMUNICATION THAT INFLUENCE CHANGE: As discussed in the introduction the family communication that takes place between and among the family members, is obviously influenced by various factors such as the structure, composition, and the economic status etc., of the family. As such, various indicators, such as, family size, structure, composition, economic status, individual’s average age in the family, individual’s average education in the family were developed and used as independent variables. Further, the association of these independent variables with the level of patient’s adjustment in different situations, has been ascertained. It is noted that the variables viz.,

a. Age of the patient
b. Sex of the patient
c. Individual’s Average Age in the family
d. Marital status of the patient
e. Individuals average educational level in the family
f. No of earning members in the family
g. No. of daughters in the patient’s family,

show significant correlation to the patients’ adjustment in different areas of patient’s life and activities (Table-6.6).
DISCUSSION: The analysis that accrued out of the data presented shows that behavioural change could occur as a result of formal counselling in majority of the instances. In some instances, however, formal counselling did not play any role in changing the behaviour of either the patient or the members in the patient’s social network. On the other hand, in some other cases, neither formal nor any other form of communication could bring about meaningful change.

The inter-personal communication effected by professional counsellors brought about certain behavioural changes in the patients, patient’s family members and members of patient’s social network. It broadened the patient’s choice to disclose and explain the diagnosis to the members of the family. It prevented the patient’s isolation in the family. It helped to increase the tolerance level of the family members in dealing with the patient to the extent that the latter could take food and share the household articles with others. The patient’s participation in social functions, sharing a smoke or a cup of tea with others and interaction with colleagues at the places of work, availing the services of a barber, a tailor or a cobbler seem to be some of the after effects of counselling.

Patient’s perception level too improved in comprehending the causes of the disease, infection and cure. A patient now could accept with equanimity, the somatic changes left by the affliction and could readjust to the changed situation in his status - economic as well as social, present and future.

On the psychological effect of counselling, it was found that anxiety for the cure, the future of the family, the marriage of the children and
misgivings about one's own marital future were considerably removed. Perceptible changes were noticed in the levels of tolerance in dealing with the children and uncomfortable situations; and throwing away the inhibitions while attending public village level functions, seeking company of others and being close to the family members and being suspicious of others.

The effect of counselling on impressing upon the patient to be regular for treatment could be observed from that mean regularity was improved, more number of patients were regular (as per WHO regimen), patient's association with treatment centre became closer, durable and in conformity with scientific requirements.

Thus, in conformity with the working hypothesis, the data show that counselling improved the patient's adjustability in the family, society, as well as his/her level of perception about the disease, treatment compliance and the psychological adjustment. On the other hand, non-formal communication seems to have little effect in bringing about positive change with regard to the above aspects.

Influence of communication from sources other than formal counselling: Information/knowledge reaching the patient from sources other than formal counselling seems to bring about behavioural changes in the patient and in the members of his social network. Incidentally it is found that the patients in the control group selectively shared the fact of their affliction whereas those from the experimental group either kept the fact completely to themselves or made it practically public.
When more members of the family come to know of the affliction, the patient's self-estimation goes down and he feels inferior to the family members or the family members from their side make the patient feel inferior. Thus comparatively less of the experimental group patients felt treated inferior by the family members. Counselling also did not make any substantial improvement in the levels of participation by the patient at the family functions and rituals; asking the patient to cook separately; and patient sharing the information on his disease with villagers and the neighbourhood.

It was also found that there was either no change or the change was similar in both the control and experimental groups in respects of certain variables proving that no form of communication has any influence. They included patient's relationship with the spouse; patient's relationship with relatives; family members finding faults with the patient; washing patient's clothes by the family members; patient's bathing place in the family; patient visiting the village temple; allowing the patient to use common well by the villagers; allowing the patient to use the common village water tank; patient attending common feasts in the village; patient sharing hukka with others; extending priest's services to the patient; receiving common facilities from the employer; patient's continuation in the same job; colleagues maintaining distance with the patient; or influencing the employer to relieve the patient from his job; patient facing problems in getting employment; patient getting angry over trifle matters and patient's overall adjustment in the workplace.
Variables relating to family/social network that influenced the change:
It is found that a few independent variables relating to the patient’s social network, such as the presence of the daughters in the patient’s family; average age in the family; his marital status; and number of earning members in the family, played significant role in bringing about positive changes in the patient’s overall adjustment.

Analytical Frame: The above analysis reveals that the effect of formal communication is found to be most on those situations directly affecting the patient. The effect was lesser on the patient’s family and still less on the community. Least effect was noticed on the co-workers of the patient. This phenomenon could be explained thus. In the experimental group the professional counsellors were in direct contact with the individual patients, as they were the main focus of the counsellors. This direct contact involves direct and contracted influence resulting in added effect of the counselling. Since counselling to the patients is also a continuous process undertaken at regular intervals it results in the synergetic effect and hence added positive impact.

On the other hand, except rare occasions, the counsellors hardly come face to face with the family members of the patient. The family members are only in contact with the patient who has been influenced by the counsellors. As such, the effect of formal counselling on the family members is, at best, second hand or trickled down to them. In other words the family gets influenced only by the patient.

This process is continued to the community and the society. In this case, the counsellors do not have any direct contact with the patient’s community or his societal network. The effect of counselling is
limited on the society as it trickled from the patient to his family members and further trickled down to the community and society. Such diluted counselling, trickling through different strata will naturally have only negligible effect. The last link in this chain of patient’s social net-work is the work place. Here the formal counselling by the professional counsellors will sieve through the patient or the community and society to the workplace. The effect of formal counselling will also be the least. The tricking effect of formal counselling or communication and the permeation of the messages into the patient’s family, society and workplace can be illustrated through diagram-3, which shows that formal communication performed by counsellors has direct effect on the individual patients as the patients are the main focus of the counselors. The family is influenced by the patient which may be said as the trickling effect of the counselling, which further is transmitted to the society and to the co-workers in the form of a chain. The effect of the message thus transmitted also in a similar way spread from individual to individual in the form of a chain.
Diagram-3: Trickling effect of formal Communication

COMPLIANCE  COMMUNICATION  PSYCHOLOGICAL

SOCIAL  IMPACT  PERCEPTUAL

PATIENT (HIGHEST)

FAMILY (LESS)

COMMUNITY (LESSER)

CO-WORKER (LEAST)
Causes for the same problem among different patients are also found to be different. All these problems and their causes are interdependent and inter-related in a sequential manner. As it could be observed from the diagram-4, the crisis starts with the problems of cognition either of the patient or of the members in the patient’s social network. The cognitive problems of the patients often lead either to psychological problems or to the problems of treatment compliance of the patient. On the other hand the cognitive problems of the members of the patient’s social network may lead to the social problems of the patient,
which in turn, result in his *psychological problems*, which may finally end up in the patient’s physical discomfort.

From this discussions on the problems and their causes, it may be inferred that, though all the psychological problems are the result of the problems of cognition or social problems, all the problems of cognition and social problems need not lead to psychological problems. It also shows that all the problems do not necessarily lead to other problems in every patient. Similarly, the problems of cognition in some patients did not cause any further problems to them and a patient who does not have any psychological or social problem does not necessarily face problems of cognition.

From the discussions in the analytical frame and the findings of the study (table-5.56, 5.57, 5.61, 5.59, 5.60, -5.64), it is found that the impact of interpersonal communication or counselling to the patients resulted in positive changes in the behaviour of the patient as well as the members of the patient’s family and society. Thus the hypothesis No.1: “Communication to the leprosy patients, changes their behaviour, behaviour of the members of their family and social network” is substantiated by the data.

As discussed in the methodology, the patients of the control group did not receive professional counselling while both the groups (control and experimental) are equally accessible to all other sorts of communication available under the NLEP. As shown in Table-5.65, the total change effected by all other means of communication across tabulated with study category, confirms the difference in the change between the control and experimental groups, which proves that the interpersonal communication has better positive impact. Thus the data presented
substantiates the hypothesis No.2: “Formal communication between the counsellors and the patients has better positive impact than the global impersonal communication practised in the National Leprosy Eradication Programme”

As per table-5.64 and the corresponding discussion, association between the levels of patient's psychological and overall adjustment and the other family factors, confirms the influence of family communication on developing coping mechanisms by the patient and the family members, thus confirming the hypothesis No.3: “Informal family communication helps developing adoptive coping mechanisms by the patients and the family members”

CONCLUSIONS: From the above discussions and findings it may be concluded that:

1. Though Health Education is provided to all the patients in the routine treatment procedure under the NLEP, this generalised Health Education can not solve the individual problems of all the patients, which lead to psychological problems of sorts. On the other hand, by and large, the formal communication extended by the professional counsellors proved to be effective in solving the individual cognitive problems of the patients to suit each individual.

2. Counselling has given an opportunity to the patients to open up their hearts and to faithfully express their familial, societal and psychological problems to the counsellors. This, in turn, enabled the counsellors to suggest pragmatic solutions to the individual problems, to a statistically significant extent, which proved to be
effective in changing the overall behaviour of the patient and the members of the patient's family and the community.

3. Counselling has had significant effect on the patient's orientation towards treatment compliance, which was assessed through patient's attitude towards treatment compliance, mean regularity index, Time taken for cure, Number of puises taken by the patient, Completion of treatment etc.

4. The effect of counselling was found to be more on the patient with regard to solving problems directly affecting him.

5. Counselling has a trickling effect, as maximum change occurred in the patient's behaviour, patient being the first link in the chain, and then on his social net work. Thus behavioural change, among the members of his family is more than the changes in society at large and the change in the workplace is the least.

6. In many situations, communication effected by the counsellors were proved to be of preventive importance.

7. On matters relating to the patient's spouse and family members, formal counselling showed little impact. However, factors like presence of daughters in the patient's family, average age of the family and number of earning persons in the family etc. played a perceptible role in patient's capacity to adjust.

8. Patient's age and marital status also played significant roles in patient's adjustment in a few instances, apart from counselling.
Thus, counselling not only improved the possibility of curing the disease but also psychologically relaxed the social environment of the patient as well as made the task of the medical personnel easier.

**Suggestions:** Based on the above conclusions, the following suggestions are offered.

1. As formal communication or counselling has proved to be effective, in solving many problems of the leprosy affected, both treatment compliance, and societal, such facilities may be made available as an integral part of routine treatment to all the patients suffering from leprosy and other stigmatised diseases. Psycho social clinics should be made a part of the NLEP.

2. The importance of counselling/ personal communication in tackling the problems of leprosy patients should be appropriately included in the contents of the leprosy training programme of the medical and para-medical workers.

3. Similar research with equal emphasis on 'message content and effect analysis' 'extent of contact and effect' and 'field based services' may give better insight on the applications of communication.
Limitations of the study:

1. The sample in the study comprises of only those patients who reported to GMLF referral hospital for treatment such, they are partially motivated for better compliance. Therefore, the sample does not reflect the actual compliance profile of the patients in the community, who often do not accept the diagnosis.

2. The study is basically a clinic oriented and formal communication to the members of patient’s social network was possible only in few cases.

3. As it needs more time for family and society to know and react to the diagnosis, the baseline data collected in the early days of diagnosis did not reflect all the problems the patients encountered. As a result, the number of the problems faced by each patient at the time of evaluation, in few cases are more than that what he/she faced at the time of baseline data collection, which gives an impression that communication played a negative role. The effect of this limitation could be overcome by comparing both the groups in terms of the direction and extent of change taken place.

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