Chapter - V

Summary, Conclusions & Limitations
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Summary:

This chapter contains the summary of the total investigation activities like the problem, objectives of the research, hypothesis, sample and tools used for collection of data. It also includes the main findings of the study, implications and suggestions for further research in this area. Later part includes limitation of the study and other explanations for the results obtained and lastly the future directions this research indicates.

Total 390 HIV infected patients attending antiretroviral treatment centre of a tertiary care hospital of Marathwada, Maharashtra, India, satisfying inclusion and exclusion criteria were studied. On obtaining the consent and discussion of detailed plan of the study with selected patients pretest questionnaires were filled. Patients were divided randomly in three groups of 130 patients each. First group was subjected to cognitive restructuring, second group to structured relapse prevention and third group to structured problem solving as cognitive behavioral interventions in the treatment stage. After completion of 12 sessions by each group posttest questionnaires were filled by them.

Statement of the Problem

“To study the effect of cognitive behavioral interventions on death anxiety and adherence to antiretroviral treatment in HIV patients.”
Objectives of the study

Primary Objective:

1. To find out the effect of cognitive behavioral interventions on adherence to antiretroviral treatment of HIV infected patients.

Secondary Objectives:

1. To find out the effect of cognitive behavioral interventions on mental health of HIV infected patients.
2. To find out the effect of cognitive behavioral interventions on death anxiety in HIV infected patients.
3. To find out the relation between mental health, death anxiety and adherence to antiretroviral treatment.

HYPOTHESIS TESTED IN THE STUDY

To attain the objectives of this study hypotheses had been put forth as discussed in the chapter number III.

Description of Sample

A purposive sample of HIV infected patients diagnosed to have HIV infection and registered in the antiretroviral treatment centre was selected. The sample size was based on population proportion of 81 percent and confidence level of 95 percent, with absolute precision of 5 percent points to have sufficient variation in the population characteristics (e.g., sex, education, economic status) that may influence adherence. Both male and female HIV infected patients of 18
to 55 years of age, taking anti-retroviral treatment for more than 6 months who could understand, read and write Marathi and Hindi language were selected. Diagnosis of HIV infection was confirmed under ICTC- Integrated counseling and testing centre of a tertiary care Hospital in Aurangabad, Maharashtra, India. Pretest questionnaire were filled by these patients and the same sample of population underwent cognitive behavioral interventions, after which posttest questionnaire were filled. Those who gave consent to fill all the three questionnaires, filled pretest, posttest, questionnaire and underwent all the interventions as specified were included in the study. Total 390 out of 400 patients fulfilled the criteria’s of selection and underwent all the interventions as per the plan of the study. Those patients not fulfilling all the above criteria, seriously ill patients, those who were lost to follow up and failed to undergo planned sessions of CBT interventions were excluded from the study. CD4 count of every patient was done at six 6 monthly interval. As per the Free ART program under NACO guidelines, viral load test was not routinely recommended so it was not done of these patients.

Tools for data collection

1) Morisky medication adherence scale (MMAS)

2) Coronell Medical Index (CMI) health questionnaire by N.N.Wig, Dwarka Prasad and S.K.Verma

3) Death anxiety scale (DAS) Hindi version by Upinder Dhar, Savita Mehta and Santosh Dhar
Data analysis

Analysis of the collected data was done by proper statistical techniques using Paired t test of significance.

Conclusions of the study

On analysis of the data following conclusions are drawn.

1) Before intervention 285 patients in the study population were adherent to treatment using MMAS (MMAS > 11). The prevalence of adherence before intervention was 73%. After intervention 325 patients were adherent to treatment. The prevalence of adherence increased to 83.33%.

2) Death anxiety was prevalent in 44.88% of population before intervention (175 patients in the study population), however after the intervention death anxiety prevalence reduced to 27.69% (108 patients). A score of > 7.05 in the DAS was used for establishing the presence of death anxiety.

3) Using mental health test questionnaire and a MHT score of >30, the prevalence of poor mental health in the study population was found. Before intervention the prevalence of poor mental health was 62.8% (245 patients), and after the intervention it reduced to 20% (78 patients).

4) The level of death anxiety significantly reduced after the intervention cognitive restructuring. Mean =1.76. SD= 2.06. T value = 9.766. Degree of freedom 12. Our significance is less than 0.05. So the difference is statistically significant.
5) The level of adherence to antiretroviral treatment significantly improved after the intervention cognitive restructuring. Mean = -0.94. SD = 2.76. T value = -3.879. Degree of freedom is 129. Our significance is less than 0.05. So the difference is statistically significant.

6) The level of mental health improved significantly after the intervention cognitive restructuring. Mean = 5.17. SD = 5.35. T value = 11.017. Our significance is less than 0.05. So the difference is statistically significant.

7) The level of death anxiety significantly reduced after the intervention structured relapse prevention. Mean = 1.71. SD = 1.62. T value = 12.048. Our significance is less than 0.05. So the difference is statistically significant.

8) The level of adherence to antiretroviral treatment significantly increased from mean of 10.84 to 11.85 after the intervention structured relapse prevention. Mean = -1.01. SD = 2.036. T value = -5.64. Our significance is less than 0.05 so the difference is statistically significant.

9) The level of mental health significantly improved after the intervention structured relapse prevention. Mean 6.32. SD = 7.28. T value = 9.908. Our significance is less than 0.05. So the difference is statistically significant.

10) There was a statistically significant reduction of death anxiety in the 130 patients who were subjected to structured problem solving. Mean = 2.18. SD = 2.46. T value = 10.119. Our significance is less than 0.05. So the difference is statistically significant.
11) The level of adherence to antiretroviral treatment statistically improved after the intervention structured problem solving. Mean = -1.65. SD= 1.94. T value= -9.701. Our significance is less than 0.05. So the difference is statistically significant.

12) The level of mental health improved after the intervention structured problem solving. The difference in the level of mental health is statistically significant. Mean= 4.99. SD= 5.46. T value= 10.426. Our significance is less than 0.05. So the difference is statistically significant.

13) Poor mental health had statistically significant correlation with poor adherence. Pearson’s correlation test was used to find relationship between mental health and adherence. A total score of >30 was considered as poor mental health.

14) There was no statistically significant correlation between death anxiety and adherence. Pearson’s correlation test was used to find relationship between death anxiety (DASA > 7.05) and Adherence.

**Recommendations for further research**

The research conducted in this thesis has led to some useful results and conclusions however it has also uncovered many areas that need additional study.

Further multicentric studies with large number of sample to compare each of the different types of interventions on adherence, mental health and death anxiety separately are suggested to confirm findings of this study.
Research pertaining to mental health and high risk sexual behavior and prevalence of perversions and sexual addictions in HIV infected patients, should also be an interesting subject of research.

Further research is warranted to find out the relationship between presence of death anxiety and adherence to antiretroviral treatment in HIV patients.

**Strengths of the study**

This study improved Doctor (Investigator) - Patient and therapist - patient relationship which helped to resolve multiple issues of HIV infected patients at personal level. As during this study investigator developed protocols to follow for cognitive behavior interventions and there was significant improvement/ change in behavior of study patient population, same protocols should help to improve psychological support to HIV patients attending ART centre in future.

**Limitations of the study**

The details of sexual behavior – safe or unsafe were not studied in detail in every patient as it was beyond the scope of this study. Mental illness and high risk sexual behavior was also not studied.

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Considering the randomized selection of the study population maturation and history are major problems for internal validity in this design, whereas the interaction of pretesting and treatment is a major threat to external validity.

Along with adherence counseling different cognitive behavioral interventions were used simultaneously, so the affectivity of each of these separately needs to be investigated.