PROCEDURE
4. Procedure

From the preceding section it has been quite clear that in order to proceed further with the study at hand and accomplish the subsequent objectives, the following steps need to be followed, as reported phase wise.

**Phase 1 of the study**

**Step 1:** Construction of information schedule specifically designed to unearth the exact nature of experiences of trauma victims after 2 months of trauma had occurred and also after 10 more months of trauma; obtaining information; making the obtained information more meaningful; and handling these qualitative data in a proper way.

**Phase 2 and Phase 3 of the study**

- Sampling
- Tools of the study
- Data Collection
- Statistical Treatment of Data

The above steps are elaborated below.

**Step 2:** For ascertaining items of the information schedule about 50 questions were framed. The questions pertained to the following areas:

1) major emotions experienced after amputation,
2) awareness about prosthetics,
3) hope to regain past life,
4) awareness about rehabilitation,
5) expectation from rehabilitation,
6) availability of a sympathetic listener,
7) meeting rehabilitation officer,
8) meeting clinical psychologists,
9) awareness about some training for better use of prosthetics,
10) awareness about training for subsequent rehabilitation.

*Actually the objective and analytical part of Phase 2 of the study were different from those of Phase 3 of the study.*
Procedure

Five questions were formulated for tapping each area. The initial 50 questions were then circulated among 3 experts——— one rehabilitation officer of Central Government (from National Institute of Orthopaedically Handicapped) one orthopaedic surgeon at a government hospital and 3 amputees already rehabilitated. The schedule was presented for checking face validity of the items i.e. item relevance. After discussion with experts 10 key questions were rewritten and retained in the final information schedule (vide appendix A).

Step 3: Sampling

Letters were written to authorities of Government hospitals as well as the Institute for the Orthopaedically Handicapped, communicating to them the purpose of the study, stating reasons for visiting the inmates and necessary permission to interview the inmates at a time convenient for both the researcher as well as them. The researcher subsequently was permitted to elicit data from the male respondents in only one state run government hospital of 4 such at Kolkata and the name of the hospital was Nilratan Sarkar Medical College and Hospital. It was located at Sealdah. The authorities of the rehabilitation centre also gave necessary permission.

The sampling procedure was purposive in nature (Singh, 1986). Purposive sample, a kind of non-probability sample is one which is based on the typicality of the cases to be included in the sample. The investigator, in such sampling procedure, has some belief that sample being handpicked is typical of the population or is a very good representative of the population. A purposive sample is also known as judgmental sample because the investigator on the basis of his impression makes a judgment regarding the concerned cases, which are thought to be typical of the population. For example, in order to study attitudes towards any national issue, a sample of journalists, teachers and legislators may be taken as an example of purposive samples because they can more reasonably be expected to represent the correct attitude than other classes of persons residing in the country.

Purposive sampling has some advantages and disadvantages. The important advantages are given below:

1. Since purposive sampling does not involve any random selection process, it is somewhat less costly and more readily accessible to the investigator.
2. Purposive sampling is a very convenient method of sampling as compared to other methods of non-probability sampling.

3. Purposive sampling guarantees that those individuals will be included in the sample that are relevant to the research design. The investigator does not get such guarantee in any other methods of non-probability sampling.

For the above reasons, as well as for feasibility of collecting data, the present researcher adhered to this technique.

Step 4: Data Collection

One hundred (16-22 years aged) single leg amputees (including both transfemoral and transtibial amputations) constituted the study group.

After permission was obtained from the authorities, the ward sister of the indoor patients of male surgical wards was contacted to know about the availability of sample members. When available, (those for whom 2 months have passed since the acute phase of the initial trauma) the subjects were met at a time convenient mutually to them, to the researcher and to the ward sisters. First of all the researcher introduced herself and explained purpose of the study. Then she wanted to know about whether the individual would be willing to cooperate by giving data. Only willing individuals were included in the final sample (almost every respondent was willing to talk). When the researcher enquired the leg amputees whether they were willing to talk about themselves, it seemed that they were only too ready pour out their hearts. Their addresses and contact numbers were recorded so that they can be contacted when they would be interviewed again after 10 more months with the custom built questionnaire only. It was expected that by that period they would be fitted with appropriate prosthetics

100 normal male youths (with no orthopaedical handicap and no reported psychiatric morbidity), who matched the study group in respect of other dimensions namely age, sex, socio-economic background, education etc were purposively selected again. (All of them were studying in two higher secondary schools and one college at Kolkata). Data were collected after necessary permissions were received by the researcher. The responses were scored, tabulated and stored carefully for future statistical treatments.
Step 2: Tools of the Study.

All the tools were either developed in India or have undergone adaptation in India. They are described below.

1. General Health Questionnaire

It is a foreign test originally developed by David Goldberg and Paul Williams, to assess Psychiatric Morbidity. It was later adapted by Dr. Saugata Basu and Dr. S K Dasgupta in Indian setup in 1996.

Human and animal behavior can be understood by conceiving it as an adaptation to various kinds of physical, psychological or social demands. Psychiatric morbidity might be defined as a pathological state characterized by confused thinking, emotional turmoil and maladaptive behavior, reasons of which may be organic and/or functional. Demand may also arise from the social environment, then it is interpersonal demand. Intrapersonal demand arises in part from the biological make-up of man - an inner desire that might have been learned or internalized from social experiences. A morbidity free life requires successfully coming to terms with external pressure as well as satisfying internal ones.

A psychiatrically morbid person finds it difficult to conform to social norms and does not feel that he is well or comfortable. By well-being is meant not simply maintenance of survival but also growth and fulfillment — the actualization of potentialities.

The Adapted version of General Health Questionnaire (GHQ) contains 28 items some of which are negative. Negative items were those where agreement indicated illness, such as constantly feeling under strain. Negative items were scored ‘0’ for not at all category ‘1’ for no more than usual category, and ‘1’ for much more than usual category. On the other hand positive items i.e. where agreement indicated mental health had been scored in the following manner:

- Better than usual: 0
- Same as usual: 0
- Less than usual: 1
- and much less than usual: 1
Procedure

The higher the score, greater is the probability that an individual may be thought as having psychiatric morbidity. Actually the scores give an individual’s position on an axis from normality to undoubted illness.

2. Adjustment Inventory

It was developed by Dr. Roma Pal,(1986) in India. No doubt adjustment as an important psychological variable can be defined as “an index of integration” between need and satisfaction. From psychological point of view, adjustment is the process by means of which the individual attempts to maintain a level of psychological and physiological equilibrium, or more simply adjustment refers to behavior directed towards tension reduction. It is also true that personality of an individual consists of his persistent tendencies to make certain kind of adjustment between his need and situational demands.

A balanced personality is the result of proper adjustment of an individual in his environment. Adjustment is seen in terms of social behavior like introversion, extroversion, submissiveness, shyness. Also it includes healthy relationship with family members a balanced home life and also nervousness, depression and other negative emotion under control.

The instrument contained 60 items – 30 positives and 30 negatives. The respondent had to write only Yes or No in response to each statement. The scoring was 1 for Yes and 0 for No. Another 30 items are reverse scored i.e. 0 for Yes and 1 for No.

Reliability of the present inventory was calculated both by Split half method (odd/even arrangement) and test retest method, retest was done at an interval of 1 month, having been administered upon an equal number of boys and girls with no statistically significant difference between scores of the two sexes. Its test retest reliability was 0.856 while split half reliability was 0.746. The validity coefficient was also found to be very high 0.834.

High scores on the inventory indicated high adjustment whereas low scores indicated low adjustment.
3. Coping Style.

It was developed by Dr. Kiran Rao and others, (1989). The adaptive repertoire of human beings is equipped with wonderful strategies about how to deal with adversities at conscious level. These are the coping styles. They are different from defense mechanisms (which are mostly unconscious). Coping mechanisms involve a conscious and powerful effort, carried out with the intent of managing or solving a problem situation (Cramer, 1998).

The Coping Checklist as developed by Rao has 7 sub-scales developed and validated in a normal, adult, community sample. There is one problem-focused scale (problem solving), 5 emotion-focused scales (distraction positive methods, distraction-negative methods, acceptance/redefinition, religion/faith and denial/blame. The last one is social support which is a combination of both problem and emotion-focused coping.

The entire scale consist of 70 items in query form to each of which one responds by either ticking ‘Yes’ or ‘No’. The score for each sub-scale is therefore the sum-total of the ‘Yes’ responses (score as 1 on that sub-scale). The test retest reliability is 0.74 and the internal consistency (alpha) ranges from 0.75-0.85 indicating adequate reliability.

4. Self-Esteem Inventory

It was constructed and standardized by M.S Prasad and G.P. Thakur (1988) in India. Self-esteem is an attribute that a person has regarding his own self which consist of any evaluation that he makes of himself or whatever feelings he has about himself. In fact what a person thinks about himself comprises the attitudes and feelings that he has about himself. The questionnaire measures Personally perceived self and Socially perceived self of the individual. The self evaluation of the individual is heavily dependent upon the way in which he thinks others view him. In fact these two aspects of self-esteem constitutes the whole self of individual.

The inventory consist of 30 items about different attributes of self. The same individual responds to each item twice. Firstly he responds by indicating the extent to which he thinks the description correctly describes himself on a 7 point rating scale.
and then rates the same attribute on the same scale according to what other people feel he possesses.

Of the thirty items, seventeen are socially undesirable. The items which are socially desirable would get 7 scores if answered completely true and 1 if answered completely false. Other intermediate answers would get scores accordingly. The socially undesirable items would be scored in the opposite manner, i.e., the completely false point would get a score of 7 and completely true would get a score of 1. An individual who has taken both the sets of the inventory will have 2 scores—one for the Personally Perceived Self (PPS) and the other for the Socially Perceived Self (SPS).

PPS = SPS (a balanced self-esteem)

PPS > SPS (a positive self-esteem)

PPS < SPS (a negative self-esteem)

5. Sense of Subjective Well-being Inventory.

It was developed by H. Sail and R. Nagpal, in India (1992). Sense of subjective well-being, referred to colloquially as “happiness” is a person's evaluation of his/her life. This evaluation is both cognitive (e.g., life-satisfaction judgment) and affective (pleasant and unpleasant emotional reactions). Most life-satisfaction scales have neutral point at which the person reports equal amount of satisfaction and dissatisfaction. Thus, the neutral point refers to that place at which the individual experiences equal amount of pleasant and unpleasant effect. A positive hedonic level refers to experiencing positive effect more of the time than negative effect (Diener et al, 1991).

Sense of subjective well-being as operationalized by Sail and Nagpal covers areas like subjective well-being—positive affect, subjective well-being—negative affect, mental mastery over self and environment, rootedness and belongingness, structural and cohesive aspects of family life, density of social network, security in crises (socio-economic and related to health) and expectation-achievement harmony.
The subjective well-being inventory, consists of 40 items, each item tagged with a 3 point rating scale that 1 being the lowest rating and 3 is the highest, 2 being the intermediate category. The subjective well-being can be scored by attributing the values 3, 2, and 1 to response categories of the positive items and 1, 2, and 3 to the negative items. The minimum and the maximum scores are 40 and 120 respectively. The total score can be interpreted summarily in the light of the 3 broad score ranges 40-60, 61-80 and 81-120 to have an overall picture of the well-being status. The mean score on normal adult Indian samples is 90.8 with a standard deviation of 9.7.

Step.4: Statistical Treatment
Phase 1. The first phase may be labeled as a phenomenological study (Croswell 1998). A phenomenological study describes the meaning of the live experiences for several individuals about a concept or the phenomenon. Phenomenologist explores the structures of consciousness in human experiences (Polkinghorne, 1989) where all participants experienced the phenomenon being studied. Here, the phenomenon was experiences of trauma and leg amputation leading to subsequent orthopaedically handicapped condition.

The Phenomenological Data Analysis steps are generally similar for all psychological phenomenologist who discuss the methods. According to Moustakas (1994) and Polkinghorne, (1989), all psychological phenomenologist employ a similar series of steps as given below.

The original protocols are divided into statements or horizontalization. Then, the units are transformed into clusters of meanings expressed in psychological and phenomenological concepts. Finally, these transformations are tied together to make a general description of the experiences, the textual description of what was experienced and the structural description of how it was experienced. The nature of sampling involved in this phase of analysis of qualitative data was "criterion sampling" (Myles and Huberman, 1994). This procedure failed with the present researcher's approach in that each study group member was a leg amputee to figure out the special problems faced by leg amputees who are securing treatment and rehabilitation at government outlets in this eastern part of the country.
In line with the essence of the above procedure the researcher, from the tabulated data counted out the incidence of occurrence of the different sub areas of the schedule twice: 1) when the amputees were visited two months after their trauma and then, 2) revisited after ten more months have passed away. In the mean while all of them were fitted with prosthetic devices. The frequencies were converted into percentages. A comparative chart was prepared regarding their experiences incurred since their trauma. A graphical representation was also prepared helping the researcher to perceive their experiential realities since trauma (vide Table 5.1.i and Figure 5.1.a).

**PHASE TWO.**

For testing hypotheses numbering 1-5 z ratio tests (Guilford and Fruchter, 1981) were conducted to test the significance of difference between mean scores obtained by the orthopaedically handicapped subjects (on the different study variables) and mean scores of the normal counterparts.

The formula for computing z ratio is as follows.

\[
Z = \frac{M_1 - M_2}{\sigma_{\text{dM}}}
\]

Where \(M_1\) and \(M_2\) are the two group means.

\(\sigma_{\text{dM}}\) = Standard Error of Mean

\[
\sigma_{\text{dM}} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}
\]

where, \(\sigma_1^2\) and \(\sigma_2^2\) = variance of the two samples

\(N_1\) and \(N_2\) = Sizes of the two samples

Garrett (1967)
PHASE THREE.

For testing hypothesis number 6, stepwise Multiple Regression Analysis (Guilford and Fruchter, 1981) was done (by using SPSS version 10.0).

Stepwise Multiple Regression Analysis is a technique for choosing the variables to include in a multiple regression model. In principle the operation begins with selection of the predictor variables (or independent variable, as the case maybe) that by itself have highest correlation with criterion variable (or dependent variable as the case maybe). The procedure then selects computational steps to determine the predictor variables that would make the largest gain in prediction.

These operations were best left to the software statistical package (in this case SPSS 10). At this point the software would find the multiple regression for the combination of the best predictors and it would make a F Test to determine whether the new R is significantly greater than the correlation without the last addition. The additional variables would cease when the probability associated with the obtained F would not rise above an adopted alpha level. In this way stepwise Multiple Regression Analysis included only those predictor variables which significantly contribute to criterion variable. \( R^2 \) value would indicate what percentage of variance in dependent or criterion variable is explained by the independent or predictor variable (S).

Stepwise Multiple Regression Analysis choose the significant predictor variables contributing to a criterion variable. The direction in which the predictor variables are contributing (either positively or negatively) depend on the direction of Beta coefficients (George and Mallery, 2006).