CHAPTER III

BURNS : EPISODE AND IMMEDIATE MANAGEMENT

The previous discussion has brought into light a global picture of the general characteristics of the respondents in terms of their socioeconomic profile, their life style, the status of interpersonal relations and the degree of satisfaction in their life. The phenomena of burns is a composite effect of a variety of variables acting on a person. It would be appropriate, now, to probe into the dynamics of the episode in terms of the physical associates of the episode, the psychological and social components that geared the episode to be a frank accident, an attempted suicide or homicide, followed by the ways of immediate management and the clinical details of the case.

PHYSICAL ASPECTS OF THE EPISODE:

The review of literature clearly emphasizes on the various activities in which the victim was involved as one of the major attributes in precipitating the episode of burns. Chaurasia (1981c:24); Kulkarni (1981b:23); Sundarrajan (1981:22) have endorsed the fact that majority of accidents, especially in women have taken place in the kitchen and while cooking. Basrur (1981b:22) has highlighted another dimension of consumer safety endangered by substandard

quality of cooking equipments, including the pressure cooker and the pressure stove. The loss prevention association evaluates the media of cooking (Kerosene, wood, coal and gas) in terms of safety. It would be relevant now to understand the situation of the subject in reference to the factors mentioned above. The following table provides the data.

TABLE XIX

Distribution with reference to Major Activity at the time of Episode

Sr.No.	Major Activity	Frequency	Percentage
1.	Cooking, warming water etc.	75	73
2.	Other activities	28	27
	Total	103	100

The data clearly endorse the observation of other studies in terms of the major activity in which the victims were involved before the episode. Approximately three out of every four subjects were involved in activities like cooking, and warming water while the episode took place. The role of women especially in India explains domestic responsibilities

as an important aspect of role performance. It is natural that kitchen and the cooking activities take the major toll, irrespective of the nature of episode discussed later. Twentyseven percent of the subjects were involved in activities like preparing bed, sleeping, working in construction labour and smoking. Here, the agent of Burns include illuminating gadgets, electric wires and its like. It would be appropriate to probe into the agents of Burns. The next table reflect the data.

TABLE XX

Distribution with reference to Agents of Burns

Sr. No.	Agents of Burns	Frequency	Percentage
1.	Pressure stove, Chulha, Sigri, Tapani	70	68
2.	Tin Lamp with kerosene	23	22
3.	Others: Gas, Electrical Wire, etc.	10	10
	Total	103	100

It is seen that in more than two thirds of the subjects the major agent of the Burn has been the pressure stove, chulha and sigri. The pressure stove has been rightly claimed as a most dangerous cooking gadget. The substandard quality, the poor maintenance and improper ways of using it lead to an explosion. It would be important to note here that

even in cases of frank or attempted suicide the vulnerability of the pressure stove in forging the nature of episode is conveniently misused.

The use of chulha with its potential danger of cracking of wood and spark is coupled by the improper ways of pouring kerosene for rekindling of the fire. The chulha being on floor and usually used in rural areas where the general dressing is a loose saree offer ready opportunity for catching fire especially affecting abdomen, genetalia and lower limbs. This may contributs to a series of future problems in marriage, child bearing and consequent rejection.

Tin lamp (Khadia) has been a most common mode of illumination in absence of electricity, due to its low cost and easy availability. The tin lamp is very light in weight and the crude manufacture makes it vulnerable to be toppled at the slightest jerk, spilling the kerosene. The loosely kept tin lamp also used as a night lamp in the hutments, is a ready target for rats and cats having a free access in the substandard housing utilized by the relatively poor subjects. Twentytwo percent of the subjects have suffered due to tin lamps.

The natural gas is a boon to a housewife provided it is used with utmost care. The safety measures taken by the civic authorities in maintaining the piped gas also hold

an important place. The negligent digging operation by the civic authorities have resulted in fire enveloping the adjacent house and killing three persons of the subjects family. The reference to such a case is important, inspite of the small number, in view of a different dimension in prevention of Burns.

A look into the variety of other sources of heat, leading to burns are presented in the next table.

TABLE XXI

Distribution with reference to Source of Heat

Sr.No.	Source of Heat	Frequency	Percentage
1.	Inflammable/Hot Liquid	80	78
2.	Wood, coals, cowdung	18	17
3.	Gas, Electricity, etc.	05	05
	Total	103	100

The source of heat in the majority eighty percent of the cases has been inflammable liquid like kerosene and hot liquids like boiling water, tea and soup. The improper ways of handling utensils contribute to the spilling and splashing of hot liquids resulting into scalds.

This was true in nine cases. In the rest of the seventy one cases, kerosene was the cause of burns due to accidents or wilful action. The single case of electric shock victimised a working woman - a construction labourer, indicate yet another area for preventive action.

PRECIPITATING EVENT:

Physical aspects of the episode of burns are important indicators in understanding the phenomena. Similarly, psychosocial aspects also play an equally important role in precipitation of the episode, more so when the nature of episode has indication of being frank or attempted suicide or homicide. Factors like the time of episode, atypical significance of the day, the vulnerability of the mood of the subject, provide help in understanding the nature of the episode.

The time of episode is an important variable in establishing the character of the episode and perhaps the motive.

TABLE XXII

Distribution with reference to Time of Episode

Sr.No.	Time of Episode	Frequency	Percentage
1.	6.00 A.M. to 12.00 Noon	31	30
2.	12.00 Noon to 6.00 P.M.	31	30
3.	6.00 P.M. to 12.00 Midnight	32	31
4.	12.00 Midnight to 6.00 A.M.	09	09
	Total	103	100

The span of the 24 hours can be viewed in different blocks. In Indian conditions a housewife may be expected to be preoccupied in keeping the deadlines of time schedule of the household chores. As mentioned in the previous chapter, wastage of time and tension due to inadequate water and toilet facilities add to the stress, making the subject vulnerable to accidents.

The table depicts an equal distribution of cases between the period of 6.00 A.M. to 12.00 Midnight. The number of cases in each of these three blocks are almost equally divided. This may be due to the fact that the subjects are housewives and mothers who are expected to master successive performance of multiple roles. Some of these roles keep them busy in kitchen for almost whole day. The number of subjects who got burnt during late hours of night constitute only nine percent. The characteristics of these cases may be seen later.

It would a paradox to say that accidents are not entirely accidental in nature. The personality and situation oriented factors are believed to be of great importance. It is also true that it is the last straw that breaks the camel's back and hence, it would be worthwhile to see the other factors like significance of the day and mood of the subject on that day. The following table reveals this situation.

TABLE XXIII

Distribution with reference to Significance of the Day and Mood of the subject

Sr.No.	Significance/Mood	Frequency	Percentage
1.	Atypical significance		
	a. No	68	66
	b. Yes	35	34
	Total	103	100
2.	Mood on the Day		
	a. Normal	65	63
	b. Not normal	38	37
	Total	103	100

The data reveal that two out of every three subjects had nothing noteworthy in terms of mood or significance of the day. The rest of the cases (approximately one third) had some atypical situation. Demands of time twenty-one percent and conflicts thirteen percent served as some of the pre-disposing factors. The mood anomalies included a wide range from the positive feelings of excitement and excessive joy to those of anger, depression, helplessness and fear. It may be difficult to pinpoint a single factor that resulted into the episode of burns. The relationship between the cause and effect here is not that of linear type but is a dynamic and complex one.

The next table attempts to indicate the nature of the event in terms of the motive.

Nature of Episode:

The episode of burns in itself is a traumatic event. The sudden onset, the clinical management and the fear of poor prognosis in themselves are sufficient to create a crisis. The problem presents more complications when the motive behind the episode becomes doubtful. Burns as discussed earlier has medico-legal implications. The act of Burns, assumes variety of characters depending on the nature of precipitation of the event and the factors contributing to it. Even in the case of accidents the root cause may be a sheer lack of awareness of proper-safer life style or it may be an outcome of tension generating situation and preoccupations due to certain personality factors. The category of suicide also includes a range of events from attempted suicides to suspected (not declared, yet indicative of wilful attempt at self) and finally frank suicides. Homicides form the third category of preconceived attempt at others' life. The next table presents the situation of the group under study.

TABLE XXIV

Distribution with reference to Nature of Episode

Sr.No.	Nature of Episode	Frequency	Percentage
1.	Accidental	93	90
2.	Suicidal	10	10
	Total	103	100

It is seen that majority of the subjects have been victims of accidents, frank and otherwise. The lack of any atypical situation and mood anomalies in approximately two thirds of the cases can form one of the explanations. A further probe into the cases of accidents reveal that twentyfive percent of the accidents had history of problems in matters of interpersonal relations in marriage, economic stress and threats to self-image due to suspected infidelity of husband and such other problems. The frank accidents include cases of usual lack of awareness of proper life style coupled with grevious unsafe procedures of the civic authorities and health problems like epilepsy.

The cases of suicidal tone form only one percent of the population. The bias of the sample can be one of the ways to explain this. The subjects of the study comprise only of the cases who survived the episode as they were not very severe in nature. Those cases who died, could have taken with them a lot of useful information and were the cases of higher degrees and percentages of burns indicative in many cases of wilful attempt at self.

One case of frank suicide had severe mental depression at the root while the other cases where the history of the case is sufficiently indicative of suicide include

depression, severe interpersonal conflict, husband's remarriage, lack of issue or male issue and total helplessness - resignation as the major factor precipitating the event.

The attempted suicide cases form fortypercent of the suicide group. Here the attempts have been indicative of secondary gains in terms of 'attention of the family members' and a sincere 'cry for help' mainly revolving around lack of say in matters of marriage and hurt due to husband's infidelity. In one case, the history is indicative of a homicide due to conflict in dowry, though nothing conclusive can be said with confidence for want of documented evidence.

Immediate Management of Burns:

The problem of burns, irrespective of its nature of episode remains both a cause and consequence of a psychosocial problem as discussed in earlier chapters. It is sad to note that mortality in reference to women is very high. The sudden, untimely, traumatic death creates an upheaval in the steady status and upsets the family functioning, creating a source for further problems. More severe are the problems of those who fortunately or unfortunately survive. The physical and emotional morbidity

created by a deformed body and scarred self image respectively, trigger off a chain of psycho-social problems. The repulsive face, disfunctioned limbs due to contractures (Converse, 1977:524) and the economic stress and disturbance in performance of family roles due to long hospitalization (Reconstructive and Plastic Surgery) create conditions for social rejection and emotional morbidity like further depression, paranoid conditions.

Is this situation inevitable? It may be utopean to consider a sudden rise in standard of life and higher status of women in society or eradication of dowry by a magic wand. It may however, be possible to minimize the psychosocial problems arising as a consequence of Burns by reducing the consequent morbidity by proper management of Burns at the time of the episode.

Immediate Management of Burns:

The medical literature (Shroff, 1983:1), (Keswani, 1983:6), Jackson (1981:4) highlight the importance of immediate management of burns. It is said that (Keswani, 1983:4) "the maximum damage following Burns occurs during the first few hours... A burn is the damage caused to the skin by thermal, chemical, electrical or radiation energy... once the damage is done, any number and variety of germs can enter the body with impunity and many valuable

substances of the body especially from the blood and tissue fluids are lost all the time... It is extremely important that fire should be put out ... and the skin should be cooled immediately". The best way to achieve this is use of water, prolonged and cooler the better.

Better hospital treatment of Burns is possible (Jackson, 1981:17) in countries where everyone lives within two hours' ambulance distance. But in a country like ours the picture is different. Antia and Arora (Burns, 1977:4-49) have shown that now severe Burns cases from small towns are well within the scope of district hospitals with weekly visits by a plastic surgery resident. But what about remote rural areas where four-fifth of our population lives? Even in metropolitan cities the promptness of transferring the patient to Burns units may be blocked by several factors like availability of working telephones and communication by ambulance in terms of difficulties in location owning to haphazard housing patterns.

Other factors like lack of motivation in taking initiative in hospital oriented help owning to fear of medico-legal implications may delay the procedure. Appropriate immediate management of Burns will have a very important role to play in reducing the morbidity and consequent psychosocial problems.

A probe into the ways of immediate management was done with a rank-order scale prepared to understand the management carried out by self and others around the victim. The items/indicators were checked by several experts including specialists in Burns and reconstructive surgery.

The presence, the identity and the actions of the persons around the victim is of relevance from both medical and legal point of view. A study conducted in Delhi (Times of India, February 5, 1984) on one hundred and nine cases shows that "of the 109 deaths, 89 died in hospital and 39 were taken to the hospital by their husbands". The study asks why the husbands were at home and not at work. It also raises issues if women are more accident prone when their husbands are at home !!" The questions may seek a debate, yet, it endorses the importance of a probe into the presence or (lack of it) of others in the group under study. The next table present the data:

TABLE XXV

Distribution with reference to Presence of Others

Sr.No.	Presence of others	Frequency	Percentage
1.	Yes	72	70
2.	No	31	30
	Total	103	100

Thirty percent victims were alone at home when the episode took place. The presence of the husband was there in thirty two percent of cases. While in forty percent others especially the neighbours were instrumental in providing attention to the subjects.

A probe into the subjects who were alone revealed that approximately one out of every six was a case related to suicide. One of the cases was a frank case of suicide while other four had history of attempt of suicide. The rest of the cases were of accidents out of which twenty three percent had history of stress due to tensions. Six out of the thirtyone cases were prone to fits due to epilepsy or convulsion hysteria. It is sad to note that such frank cases of fits, in need of monitoring should be left alone at home !!

The literature on Burns (Shrivastava,1981:4) suggests that 'Impulsive reaction to a crisis while in a state of panic only escalates the problem and can lead to unnecessary risk. A few seconds' thought produce the calm, reasoned response that can save a life. It would be interesting to see the personal response of the subjects in the following table.

TABLE XXVI

Distribution with reference to Immediate Response of the Patients

Sr.No.	Item	Frequency	Percentage
1.	Shouted for help	63	61
2.	Did nothing/unconscious	23	22
3.	Tried to remove clothes (11), Applied Ink, Ghee etc. (5), Ran around (1)	17	17
	Total	103	100

The criteria for appropriate immediate management arrived at with the help of literature and personal interviews with the experts suggest pouring of water, as the ideal response. Shouting for help, putting the fire off and application of proper medicines are the other indicators of the appropriate management.

It is seen that in one out of every five cases total 'inaction' was reported. Irrespective of the fact whether the inaction was wilful in tune with the motive of attempt of self or was inevitable due to severity of the case explains the high mortality. Out of the seventeen cases who 'acted', none used water for cooling the burns. Six cases acted in an inappropriate way preparing ground for infection through use of unscientific procedures and in one case

aggravating fire by running around. The data highlight an important area for social work intervention !

The role of the persons around the victim is always more important in episode of Burns. A reasoned, appropriate act of management by others may contribute to reduction of mortality and morbidity, as the treatment in first half an hour plays a decisive role in the prognosis. How did the others provide immediate help is presented in the next table.

TABLE XXVII

Distribution with reference to Immediate Response of Others

Sr.No.	Items	Frequency	Percentage
1.	Taken to Hospital (19), Poured water (17), Removed clothes (17), Stopped the source of heat and applied appropriate medicines (8)	61	59
2.	Covered with rug (29), Applied Ink, Ghee, etc. (10), Did nothing (3)	42	41
	Total	103	100

The first act of help includes 17 cases who tried to pour water on the burns, the ideal thing to do. Six out of every ten did things that were acceptable while in forty percent of the cases the actions were inappropriate. The action of covering with rug, application of Ghee lead to

preservation of heat inside the body increasing the depth/ degree of burns and risk of infection. The three cases where nothing was done, the motive is questionable.

Degree of Burns:

The degree of burns indicate the depth of the burns and is one of the important variables in determining the severity and prognosis for mortality and morbidity. The detailed discussion as presented in the introduction describe the First degree Burns as superficial, the Second degree Burns refer to destruction of both dermis and epidermis while Third degree Burns involve all layers of skin, subcutaneous tissue, muscles and even bones. The picture of the group under study is as follows:

TABLE XXVIII

Distribution with reference to degree of Burns (N=103)

Sr.No.	Degree of Burns	Frequency	Percentage
1.	First	21	20
2.	Second	50	49
3.	Third	32	31
	Total	103	100

It is seen that one out of every five cases has only minor burns. Approximately seventy percent of the cases are

of First and Second degree Burns. The data on nature of episode reveal that approximately ninety percent of the total cases are accidental in nature. Out of these cases seventy five percent of the cases are frank accidents while twentyfive percent are tension-related accidents. Approximately ten percent of cases are suicidal in nature. The picture indicates that the tension-related accidents and those where suicidal effort is indicated are likely to lead to higher degree burns.

Body areas affected in burns:

The areas involved in burns, along with extent and degree from one of most important indicators for establishing the case as accidental, suicidal or homicidal for medico legal considerations. It would be sufficient to see the data in reference to the body areas affected of the group under study.

TABLE XXIX

Distribution with reference to Body Areas Affected

Sr.No.	Body Area Affected	Frequency	Percentage
1.	Head and Neck only	02	02
2.	Limbs only	28	27
3.	Thorax only	01	01
4.	Head, Neck and Limbs	07	07
5.	Head, Neck and Thorax	01	01
6.	Limbs and Thorax	27	26
7.	All of the above	37	36
	Total	103	100

The data reveal that in thirty six percent of cases the involvement is total. This group includes the cases of major accidents due to gas, breezy atmosphere on the first floor kitchen in an non-congested area and those where person's attempt on life was indicated.

Percentage of Burns:

The percentage of body area is calculated by two methods. The area of the palm of hand considered as one percent of the body area. The other is by Wallace's rule of nine where body's total area is divided in units in multiple '9' as follows:

- Upper limbs : 9+9 = 18 percent
- Lower limbs : 18+18 = 36 percent
- Front & Back: 18+18 = 36 percent
- Head & Neck : 9 = 9 percent
- Genitalia : 1 = 1 percent

The final percentage is calculated by adding up the relevant percentages. Burns over fifteen percent produce surgical shock, those over forty percent are serious and in our country Burns of over sixty percent are invariably fatal (Kesvani, 1979:1).

TABLE XXX

Distribution with reference to Percentage of Body Area Affected

Sr.No.	Percentage of Affected Area	Frequency	Percentage
1.	Less than 20 percent	32	31
2.	21 to 40 percent	37	36
3.	41 to 60 percent	14	14
4.	61 to 80 percent	18	17
5.	81 percent or more	02	02
	Total	103	100

The data reveal that approximately one out of every five cases have more than sixty percent burns with extremely poor prognosis. The group includes majority of suicidal and tension related accidental cases.

Nature of Burns:

This indicator is important for the treatment team. The nature of Burns (not episode) can be rooted to the source of heat. Scalds are caused by hot liquids while the dry burns are caused by flames. The picture of the subject follows:

TABLE XXXI

Distribution with reference to Nature of Burns

Sr.No.	Nature of Burns	Frequency	Percentage
1.	Dry Burns	93	90
2.	Scald	10	10
	Total	103	100

The data reveal that one out of every ten subjects sustained scalds. These are the cases of removing hot vessels filled with boiling water, milk, soup and other liquids. The improper manner to handle hot vessels with dress material (saree or kurta ends) without using a pair of tongs results into such frank accidents.

The dry Burns are found, mostly due to kerosene. Majority of the cases report of the saree caught in flames excepting the cases where the liquid was poured on the body.

Medical Attention:

Medical attention is the next important factor after immediate management of Burns. It also has a medico-legal

implication and cases with suspicion of a wilful act (by self or others) are sometimes treated by crude methods and/or by improper medical treatment, to be brought to the hospital only when inevitable. The motive is obvious.

TABLE XXXII

Distribution with reference to Medical attention received before coming to S.S.G.

Sr.No.	Medical Attention Received	Frequency	Percentage
1.	No	74	71
2.	Yes	29	29
	Total	103	100

The data reveal that in approximately thirty percent of cases some treatment was given before the subject was brought to the hospital. The cases from rural areas are more likely to adopt such practices.

Duration of receiving medical treatment:

The time factor in receiving treatment is a crucial factor in determining the prognosis. Untreated case or wrongly treated cases permit the heat to penetrate in lower layers of skin complicating the problem.

TABLE XXXIII

Distribution with reference to Number of Hours taken in getting Medical attention

Sr.No.	Number of hours taken	Frequency	Percentage
1.	One	60	58
2.	Two to Three	25	24
3.	Four or more	16	16
4.	Not known	02	02
	Total	103	100

It is seen that in one case out of every four the time is two or three hours. In (a) fifteen percent of cases the time is four or more than four hours ranging upto as high as eight hours. Lack of proper transport, and poor telephone facilities play their part in the delay. It is necessary to educate the community to pick up any vehicle available on the spot without waiting for an ambulance.

Condition at admission:

The Burns produces a surgical shock phase and can continue upto 48 hours.

TABLE XXXIV

Distribution with reference to Condition at Admission

Sr.No.	Condition at admission	Frequency	Percentage
1.	Communicable	61	59
2.	Unconscious/In shock	42	41
	Total	103	100

It is seen that four out of every ten cases were unconscious when brought to the hospital.

Prognosis:

The condition of the patient, the degree, the site, the extent are some of the variables used by medical profession to determine the prognosis. The data regarding the group is as follows:

TABLE XXXV

Distribution with reference to Prognosis for Mortality and Morbidity

Sr.No.	Prognosis	Frequency	Percentage
1.	Poor	41	40
2.	Fair	36	35
3.	Good	26	25
	Total	103	100

It is seen that in four out of every ten subjects survival is doubtful. It is shocking to see that the total sample is exclusive of those who had already passed away !! In one fourth of the cases, the treatment will cure the scars. It is those thirty five percent of cases who will survive with deformities and a long hospitalisation to follow, that must receive social work intervention to arrest the psychosocial problems emerging from the Burns.

The foregoing discussion has presented the different facets of the episode, its immediate management and clinical information on Burns. The data is used collectively to have a comprehensive picture of Burns from a psycho-social perspective.

The episode of Burns however is a resultant of multiplicity of factors acting in a unique way in each case. Every case holds its importance in terms of realizing the dynamics of underlying factors and each can contribute to the understanding of new dimensions and trends to problem of Burns.

An attempt has been made in the next chapter, to present the case studies of selected subjects.