UNIT - 5

Environmental Stress And Application and Human Response

The issues pertaining to environmental stress have assumed a critical dinmension in the

technocratic industrial societies. Verv often reports dealing with the adverse ettects resulting

from change in the environmental balance, global earth warming, acid rain, acidification of ground,

chemical pollution, noise, crowding are heard. The adverse effects of these ecological

irritants have heightened the awareness of communityenvironment crisis and have perplexed the

scientists,

administrators, policy makers, and social workers to think and take necessary steps towards

resolving the problems of ecological balance. Although, rapid industrialization, which

is one of the prime sources of man-environment disharmony, has assured a number of economic

benefits, however, danger prevails. Even the preliminary safeguards to ensure safety and health are

lacking in many of the Our dangerous chemical plants.

past experiences conform the fact that zero-order risk free chemical and nuclear industries are

inconceivable. Sufficient evidence exists

that not only the people of the third worla countries were victimized by the industrial accidents

but also countless marine and human casualties

were reported in tu most advanced countries of the world like Soviet Union, Unitea States and

Germany in the 1980s.The suddenness and intensity by which the global

eco-catastrophe adversely affects the big strata of the community is immediately noticed not only

because of the incalculable human and material cost but also due to

greater publicity. However, people fail to notice or are unaware of the dangerous psychological

effects of silent

Environmental Stress And Health

ecological stressors, which impinge on them in their day-today lives. In this chapter attempt is

been made to examine the impact of major environmental stressors (e.g. noise, air and chemical

pollution) which pose potential threats to cognitive, emotional, behavioural and health related

aspects on humans. In recent years the area of psychological stress has made significant advances,

in understanding the relationship between physical environmental influences on health and well

being. It deals with the impact of a wide range of mostly negative outcomes that otherwise seem to

defy adequate explanation. Advances are been made in understanding the intricacies of environmental

stress with the influential work

of Selye (1956) and Lazarus (1966). Furthermore, a series of

well designed studies of Glass and Singer (1972) on noise and studies on chemical pollution by

Veitch and Arkkelin (1995); the environmental stress concept has led to ample amount of research on

the properties of environment and its relationship with human behaviour and health. Another

prominent concerns of environmental psychology for the last two decades has been the understanding

of underlying psychological processes through which physical environment and behaviour are linked.

A number of studies have noted the moderating/ mediating role of various psychological factors like

perceived control, stress tolerance, coping resources and personality dispositions of environmental

factors on human social

behaviour, health and well-being (Baum & Paulus, 1987; Evans & Cohen, 1987; Nagar, 1999; Jain and

Palsane, 2004).

In this chapter focus will be on the physical environmental Conditions that we experience in our

daily life. The chapter is organized into three sections. A brief overview of stress paradigm

including the definition of stress, characteristics of

environmental stressors and general theoretical perspectives in stress literature will be

presented. The next section briefly

Summarizes major type of environmental stressors. In this section attempt will be made to review

studies on noise, air and chemical pollution. Finally, in the last section the status of

environmental stress research will be evaluated.

The issues pertaining to environmental stress have assumed a

critical dinmension in the technocratic industrial societies. Verv often reports dealing with the

adverse ettects resulting from change in the environmental balance, global earth warming, acid

rain, acidification of ground, chemical pollution, noise, crowding are heard. The adverse effects

of these ecological

irritants have heightened the awareness of communityenvironment crisis and have perplexed the

scientists,

administrators, policy makers, and social workers to think and take necessary steps towards

resolving the problems of ecological balance. Although, rapid industrialization, which

is one of the prime sources of man-environment disharmony, has assured a number of economic

benefits, however, danger prevails. Even the preliminary safeguards to ensure safety and health are

lacking in many of the Our dangerous chemical plants

past experiences conform the fact that zero-order risk free chemical and nuclear industries are

inconceivable. Sufficient evidence exists that not only the people of the third worla countries

were victimized by

the industrial accidents but also countless marine and human casualties were reported in tu most

advanced countries of the world like Soviet Union, United States and Germany in the 1980s.The

suddenness and intensity by which the global eco-catastrophe adversely affects the big strata

of the community is immediately noticed not oniy because of the incalculable human and material

cost but also due to greater publicity. However, people fail to notice or are unaware of the

dangerous psychological effects of silent

ecological stressors, which impinge on them in their day-today lives. In this chapter attempt is

been made to examine the impact of major environmental stressors (e.g. noise, air and chemical

pollution) which pose potential threats to cognitive, emotional, behavioural and health related

aspects on humans. In recent years the area of psychological stress has made significant advances,

in understanding the relationship between physical environmental influences on health and well

being. It deals with the impact of a wide range of mostly negative outcomes that otherwise seem to

defy adequate explanation. Advances are been made in understanding the intricacies of environmental

stress with the influential work

of Selye (1956) and Lazarus (1966). Furthermore, a series of well designed studies of Glass and

Singer (1972) on noise and studies on chemical pollution by Veitch and Arkkelin (1995); the

environmental stress concept has led to ample amount of research on the properties of environment

and its relationship with human behaviour and health. Another prominent concerns of environmental

psychology for the last two decades has been the understanding of underlying psychological

processes through which physical environment and behaviour are linked. A number of studies have

noted the moderating/ mediating role of various psychological factors like perceived control,

stress tolerance, coping resources and personality

dispositions of environmental factors on human social behaviour, health and well-being (Baum &

Paulus, 1987; Evans & Cohen, 1987; Nagar, 1999; Jain and Palsane, 2004).

In this chapter focus will be on the physical environmental Conditions that we experience in our

daily life. The chapter is organized into three sections. A brief overview of stress paradigm

including the definition of stress, characteristics of

environmental stressors and general theoretical perspectives in stress literature will be

presented. The next section briefly

Summarizes major type of environmental stressors. In this section attempt will be made to review

studies on noise, air and chemical pollution. Finally, in the last section the status of

environmental stress research will be evaluated.

of its users. However, for the last three decades or so more behavioural oriented perspectives are

integrated into the

design process. An awareness regarding the influence of design on the quality of life is gradually

evolving among the design professionals. The three major but ditferent viewpoints regarding the

degree and extent of architectural influence on human behaviour are briefly summarized below

Architectural Determinism

The early conceptualization of architectural determinism believes that the properties of the built

environment shape the

behaviour of the people living therein. In its extreme form, architecture and design are considered

as the only causes of behaviour. This viewpoint presents a very elementary picture and fails to

account for the relationship between design and behaviour. This perspective ignores the fact that

the transaction between people and the environment is reciprocal. The environment can exert change

in people and the user can also influence and change the features of the environment.

Furthermore, architectural determinism does not allow for the complex interactions between the

physical, social, and psychological factors. On the one hand, sufficient evidence regarding the

influence of architectural design on various aspects of social and group behaviour exists. On the

other hand, an equally compelling evidence is available that seem to

suggest that users need and their the influence ongoing activities modify of design on behaviour

(Baum & Paulus, 1987).

Environmental Possibilismn

The perspective on environmental possibilism developed by Porteous (1977) posits that environment

presents an opportunity

as well as it sets limits on behaviour. In response to the environment we examine the choices that

determine the degree to which the opportunity is realized or barriers are encountered. As opposed

to the deterministic notion (environment determines behaviour), the

possibilism approach view the environment as a context and in which the behavios the outcomes are

jointly determined by the occurs, and evironment and the choices we make.

Environmental Probabilism

Another perspective that falls somewhere in between the terminist and the possibilism positions th

on design and

teen behaviour is called environmental probabilism by Porteus

us (1977). The probabilistic perspective assumes that an individual mav choose a variety of

responses in any environmental situation.

However, there are probabilities associated with

specific instances of design and behaviour. These probabilities result from both architectural as

well as non-architectural factors on behaviour. In other words, in response to

environmental context, the probabilities of some behavioural1 tendencies are more likely, relative

to other response options. The three perspectives discussed above on architectural influences on

behaviour provide us an indication that social and psychologicai phenomena are to some extent

influenced by architectural design. Before focusing on studies on residential design and its

influence on human behaviour, a brief mention will be made on the design process and the stages in

which design ideas are implemented.

The Design Process

A number of interior and exterior elements of design like color of the building, lighting,

placement of windows, aesthetic quality of the surrounding heavily influence the users behaviour

and mood states is extensively noted by scholars (Baum& Valins, 1977; Stokols & Altman, 1987). The

design processinvolves a general description of how different elements embedded in the

architectural design are planned and implemented. Before discussing the various stages in the ESgn

process, and how design are planned and implemented,

t seems pertinent to briefly mention the concepts of congruence and design alternatives.

Congruence

The construct of congruence refers to the degree of fit between design features and the needs and

preferences of the user. If there is adequate match between the form and the function. the design

supports the necessary behaviour and the positive

outcome is usually seen. Thus, design that facilitates the needs, aspirations and preferences are

said to be congruent to the people using them. However, if behavioural options are restricted by

the arrangement and design of space, users may feel dissatisfied and will exhibit negative

emotional states. In

reference to residential setting the concept of congruence is sometimes equated with habitability (Nelson, 1976).

Habitability is often conceptualized in terms of how well a particular environmental provision fits the needs of its users. This fit range from basic survival in terms of providing shelter to residents, to desig1ning an environment which promotes safety and security to its inhabitants.

Design Alternatives

Determining the proper design alternative is complex because the process involves consideration of

range of factors including

social, economic, artistic and cultural. For instance, in a residentia l setting a number of

elements, different scheme of Color, provision

of lighting or arrangement of open space, all reflect design alternatives In addition, the involves

weighing various design process alternatives on different criterion.

Stages in Design Process

In terms of the social-psychological input to design in the context of person we need to view

design as a process comprising of various stages

. A number of researchers have outlined and elaborated these stages (Baum, Singer, & Baum, 1978;

Cassidy, 1997). For example, according to Baum et a (1987) the five stages involved in the design

process are related to the awareness of design alternatives, Selection of behavioural.

--> Programning Stage

-->Design Stage

-->Construction Stage

-->Evoluvation Stage

-->Use Stage

Residential Design

-->Physical Factors

-->Functional Factors

-->Congnitive Factors

-->Affective Factors

-->Social Factors

-->Inergrated approaches

-->Garbage Problem and Littering Behaviour

-->Energy Conversation

Environmental movements

-->The Chipko Andolan

-->Women and Forest Conservation

-->The Narmada Andalon

BY

Subject Teacher

G.Ramanathan Phd

PH : 9443161509 , 9486792653