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Effect of Air Pollution on Aggression, Anxiety and Academic Achievement of School Children

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A Dissertation Submitted in Fulfillment for the Requirements of the Degree of Doctor of Philosophy in Psychology

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Dedicated

to my mother

and

in memory of my father

DECLARATION

The thesis contains the independent original work of the author except where full references are given. The report has neither been submitted before nor being submitted else where in any form at the same time for the award of any degree.

Rajshahi University
June, 2008

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CERTIFICATE

This is to certify that Mr.Md.Abul Kalam Azad has completed the research work titled " **EFFECT OF AIR POLLUTION ON AGGRESSION, ANXIETY AND ACADEMIC ACHIEVEMENT OF SCHOOL CHILDREN"** under my supervision. This is a report of his independent and original research work. I recommend the research report for evaluation for the award of Ph.D. degree in Psychology.

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The Author

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ABSTRACT

The present study is an empirical investigation into the effect of air pollution on aggression, anxiety and academic achievement of 1724 secondary school children (of classes VIII, IX & X and of 12 to 15 years of age) in Dhaka city. Two sample groups of children – one (N=848) from high air polluted area and the other (N=876) from low air polluted area (according to the report of the Department of Environment-DoE, Bangladesh) were selected. Three separate scales – The Air pollution Scale for Children (APSC) developed by the researcher himself, separate Bengali versions of anxiety and aggression scales from the Personality Inventory for Children (PIC-Wirt, et al,1990) were used. APSC was administered on two groups of children and the aggression scale and the anxiety scale were used on the parents of the children. The results of annual examination of the children for two consecutive years were used as their academic achievement. It was hypothesized that children group affected with high air pollution (HAG) would show (a) higher aggression,

(b) higher anxiety and (c) low academic achievement than children group who are less affected with air pollution (LAG). Result analyzed through t-test confirmed the three hypotheses.

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CHAPTER- 1

Introduction and Review of Literature

INTRODUCTION AND REVIEW OF LITERATURE

Now a days air pollution is one of the greatest environmental evils. It is widely discussed because of the seriousness of this problem. Generally speaking, susceptibility to the effects of air pollution is most among infants, the elderly, and the infirm. It produces many types of physiological and psychological problems such as headache, dizziness, eye and nasal irritation, lassitude, collapse, asthma, aggression, paralysis, silicosis, mental development, heart attack, anxiety, lung cancer, pulmonary diseases, academic achievement, etc. Pre-school and school-going children are more sensitive to air pollutants. So the study has been conducted on the children to know the adverse effect of air pollution on their aggression, anxiety and academic achievement. The key concepts were used in the study of air pollution, aggression, anxiety and academic achievement to find out the relations among these aspects. It is therefore necessary to have a brief discussion about what these terms mean by.

1.1 Air pollution:

Fresh air is the most useful natural property. It helps human beings more directly than any other natural property. In average, a human being breaths 22000 times a day and inhales 16kg of air each day (Rao, 1999). Generally, human beings can live for five weeks without any food, five days without any water but not even five minutes without air (Raju, 1997). The air is abundantly available over

the surface of the earth. It is not only a life-helping property but also life damaging too. Ideal condition of the air, we inhale, contains 78.09% nitrogen, 20.94% oxygen, and 0.97% gaseous mixture of carbon dioxide, helium, organon, neon, xenon, krypton, ozone and the inorganic gases mixed with the amount varies with time and place. The balance among these air components maintains the well-being of a man. But when the balance among these components is disturbed, or the presence in it of any substance that is not a part of the normal air, it is called air pollution. In general, air pollution is the presence of foreign substance in the air. Some specific definitions of air pollution are as follows:

Painter,D.E. (1974) defined air pollution as the presence in the out door atmosphere of one or more contaminates in a sufficient quantity and prolonged duration which cause them to be injurious to human health and welfare and animal and plant life and to interfere with the enjoyment of life and property.

The American Medical Association (1961) defined air pollution as the excessive concentration of foreign matter in the air which adversely affects the well-being of the individual or causes damage to property.

The Bureau of Indian Standard (1979) states that air pollution is the presence in ambient atmosphere of substances generally resulting from the activities of man, in sufficient concentration present for a sufficient time and under circumstances which interfere significantly with the comfort, health or welfare of persons with the full use of enjoyment of property.

World Health Organization (WHO- 1961) states a legal definition of air pollution as the presence in the outdoor atmosphere of substances or contaminants put there by man, in quantities or concentrations and of a duration as to cause any discomfort to a substantial number of inhabitants of a district which are injurious to public health or to human, plant or animal life and property throughout the state or throughout such territories or areas of the state as shall be affected thereby.

According to the Department of Environment of Bangladesh(1995) pollution means such contamination, or other alteration of the physical , chemical or biological properties of air, water or soil, including change in temperature, taste, turbidity, odor or any other characteristics of these or such discharge of any liquid, gaseous, solid, radioactive or other substances into air, water or soil or any elements of the environment as will or is likely to create nuisance or render such air, water, or soil harmful, detrimental or disagreeable to public health or to domestic, commercial, industrial, agriculture, recreational or other bonafide uses, including livestock wild animals, birds, fish, plants or other forms of life.

From the above definitions, air pollution may be simplified as the presence of pollutants in air in sufficient quantity and duration which adversely affect the health and enjoyment of property of human beings, animals and plants.

Major air pollutants:

Presence of foreign substances as well as pollutants in air may be in the form of solids, liquids and gases which are produced by natural and man-made activities. Naturally the occurring processes are dust storms, volcanic eruptions, forest fires, sea spray, plant pollen etc. Man-made activities like domestic, industrialized, civil construction, smoking, traffic etc are the main causes of air pollution. There are many kinds of air pollutants which are produced by these varieties of sources. The major air pollutants are:

Carbon Monoxide: Carbon monoxide is a colourless, odorless and tasteless gas. It is a poisonous gas, it is produced as a product of incomplete combustion. When inhaled, it passes through the respiratory system and combines in the lung with the haemoglobin in the blood to carboxidehaemoglobin, and reduces the ability of the haemoglobin to carry oxygen to the tissues. The affinity of carbon monoxide is some 200 times that of oxygen for attacking itself to the haemoglobin so that low levels of carbon monoxide can still result in high levels of carbon monoxide (Sethi & others, 1991).

Carboxyhaemoglobin levels of 2 to 5 percent effects are found to the central nervous system, and levels greater than 5 percent are found cardiac and pulmonary function changes. There is evidence that carbonmonoxide concentrations are associated with excessive mortality rate (Hexter & Goldsmith, 1971). Another study has been conducted by Cohen et al. (1969), and shown that a relationship exists between

ambient carbon monoxide levels and heart attacks. There is ample evidence that ambient air concentrations of carbon monoxide in major traffic areas are high enough to produce significant effects on health and created many kinds of health hazards such as heart disease, asthma (Das,1999).

Carbon-dioxide: Petroleum, coal, natural gas, wood are used for fuel in all organic substances, and produces carbon-dioxide directly or indirectly. All living organisms inject carbon-dioxide in the atmosphere. Mainly carbon-dioxide is taken up by plants in the process of photosynthesis. The organic carbon-dioxide is returned to the atmosphere through 'carbon cycle' and exist the equilibrium. But the equilibrium of carbon-dioxide may be upset drastically by the enormous increase in the combustion of fuels during this present time. The indirect effects of carbon-dioxide on human beings are that it forms a blanket of insulation around the earth and changes its temperature, which affects all living organisms.

Sulphur Dioxide: Sulphur dioxide is a colourless, nonflammable, non-explosive gas. Most of the total emission of sulphur dioxide is from burning of fossil fuel by industries. It is an irritant gas which affects the mucous membranes when inhaled. It is causing severe bronchospasms at relatively low levels of concentration. Sulphurdioxide is more intensivelyirritating to the eye, the skin and the respiratory tract. Exposure to the high concentration of sulphur dioxide causes a pronounced choking sensation and severe distress (Sethi, 1991).

Oxides of Nitrogen: Only two types of nitrogen oxides are thought to affect human health, These are nitric oxide and nitrogen-dioxide. Both oxides are potential health hazards. Animal mortality studies indicate that nitrogen–dioxide is more toxic than nitrogen oxide. Nitrogen-dioxide is known to cause occupational disease, it also affects to eye and nasal irritations.

Hydrogen Sulphide: Hydrogen sulphide is a colourless gas. It is well-known for its rotten egg like odour. Exposures to hydrogen sulphide for short periods can result in fatigue of the sense of smell. Low concentration of hydrogen sulphide causes headache, nausea, lassitude collapse, comma and death. In 1950, peoples of the small town Poza Rice, Mexico was affected from this gas and 320 people were hospitalized and 22 died (Rao & Rao, 1999).

The principal natural sources of hydrogen sulphide are vegetation and animal material. The important industrial sources of hydrogen sulphide are those which the users of high sulphide fuels.

Ozone: Ozone is a colourless gas and is present in sufficient amount in both the stratosphere and the troposphere. Stratospheric ozone is generated by the action of ultraviolet light on molecules of oxygen and troposphere ozone is generated by the action of ultraviolet light on molecules of nitrogen dioxide. The sunlight acting on atmospheric pollutants. Hydrocarbon emissions from other vehicles accelerate the formation of troposphere ozone. High concentration of troposphere ozone has deleterious effects on human health. Troposphere ozone is a potent green house gas and may arise significantly to the problem of global warming.

Fluorides: Fluorides present in air, range from those which are extremely irritant and corrosive like hydrogen fluoride to relatively non-reactive compounds. But fluoride is a cumulative poison even under condition of prolonged exposure and in sub-acute concentrations. Fluorides particulates are released in the air by brick factories, aluminum smelters and phosphate works.

Lead: Most of the atmospheric lead comes from automobile fuel. Typical samples contain between 2 to 4 grams of lead per liter with an average of about 2.8 grams (Shethi,1991). About 70% to 80% of the lead in fuel is emitted by the automobiles as particulate. The emission is less at low-speed driving and is more on high ways. The study of the DOE has supported it. Result of this study has expressed that lead levels are high in the areas with heavy traffic jam in Dhaka city. Urban residents have greater levels of lead than rural residents (Sethi & Iqbal, 1991).

Beryllium: Beryllium is released in atmosphere during the burning of coal, but most of the affected persons who works in industries where beryllium is produced or used. Beryllium has been shown to damage skin and mucous membrane. It may cause cancer in lungs and bone marrow.

Bismuth: In atmosphere bismuth is injected from the burning of coal. The serious health effect of bismuth is kidney and liver damage in large dozes.

Cadmium: Cadmium is a normal constituent of soil and water, and it is usually mined from zinc ores. It is used in semiconductors, electroplating bases, pvc manufacture and batteries, and as an anti-friction agent. Cadmium is dangerous because very small dose of cadmium can result in vomiting, diarrhea, colitis and continuous exposure causes hyper tension and cardio-vascular disease.

Nickel: Nickel is used in various forms for nickel plating such as a catalyst, a mordant, and in ceramic glazes. It is injected in the air through diesel engine, coal and tobacco smoking. Humans inhale nickel as nickel tetracarbonyl and are affected with respiratory disorders, lung cancer, etc.

Hydrocarbon Vapours: Hydrocarbons are organic compounds consisting of hydrogen and carbon. They comprise the major portion of coal, petroleum and similar products. Most of the hydrocarbon vapours comes from automobiles in the air and have health implications such as eye and respiratory irritation.

Insecticides: Insecticides are not only harmful for insects but also poisonous for human. They can affect the central nervous system and may attack other vital organs.

Radio active isotopes: The major sources of radio active air pollutants are- (a) nuclear reactors, (b) experimental accelerators, (c) scientific and medical use of radio active isotopes, (d) agricultural and industrial use of radio active isotopes as tracers and (e) testing of nuclear bombs in the atmosphere.

The serious health effects are anaemia, leukemia, and cancer. Radio active isotopes also cause genetic defects. It also shortens the life span of an individual.

Allergic agents: It is generally recognized by medical personnel that the air we breathe is the natural carrier of many microscopic organic materials which may act as allergies. These organic materials are present in yeasts or moulds, or in animal hair, fur, or feathers.

Plant Pollen: During spring season, lot of plant pollen is produced and due to wind motion, it is spread very fast, which makes air pollution. Pollen reacts in our body to such allergens occur mainly in the skin and the respiratory tract.

Dust: It is an air suspension of irregular shaped mineral or other particles of size with 1 to 200 microns. They settle under the influence of gravity. It is generated by crushing, chipping, grinding and by natural disintegration of rock and soil. Mainly, dust produces respiratory disease, disease like silicosis, asbestosis etc.

Smoking: The dose of pollutants from cigarette smoking is high and intermittent, relative to that from community air pollution. The effects of cigarette smoking are more important than effects of air pollution as far as causing lung cancer or chronic pulmonary disease when the whole population is concerned.

Smog: The word 'smog' is supposed to have originated in Great Britain as a short form of smoke-fog. The term may have been suggested by a report on smog for deaths by H.A. des Venux in 1911. The report dealt

with two occasions during the autumn of 1909 in Glasgow, Scotland, where 1063 deaths were attributed to smoke and fog. In recent years, atmospheric pollution has become increasingly critical. There have been several catastrophic instances of smog resulting in serious injury and multiple deaths.

Air Pollution Episodes:

Several disastrous episodes have focused attention upon air pollution as a health hazard. They have attracted attention because of illness and loss of life. The first episodes of modern times were the disaster in Belgium's Meuse Valley, in December 1930. At this disaster, many people became ill and about 60 died. The second disaster occurred at Donora Pennsylvania, USA. In it 20 persons died and 13 persons severely affected by heart or respiratory disease.

In this time, many disasters have been occurred in many places in the world, such as London, Los Angeles, New York, Mexico, Tokyo, Bhopal etc. 4000 peoples died in London disaster, 168 died in New York disaster, 22 died and 320 severe affected in Mexico disaster, 125 died in Bhopal disaster. The recent TSUNAMI and SIDR in south asia have destroyed many lives.

SOURCES OF AIR POLLUTANTS:

Pollutants present in the air are produced by natural and man-made activities. Naturally occurring processes such as dust storms, volcanic eruptions etc, and man-made activities such as industrial and civil construction operations create pollution. Various sources of air pollution are discussed below.

Natural Sources:

Dust Storms: Dust storms are produced due to wind circulation around the planet Earth. Global meteorological processes make the environment with dust pollution, in some areas and in some occasions.

Forest Fires: volcanoes (eruption of lava from earth's core) release lot of solid particles, gases like sulphur dioxide and radiation. Heat waves may be spread up to several kilometers. The surrounding areas are greatly affected with heavy dust and pollution.

Sea Spray: Sea spray is a continuous phenomenon, which is a major source of particulate (liquid droplets) pollution in the atmosphere.

Plant Pollen: During spring season, lot of plant pollen is produced and due to wind motion, it is spread very fast, which makes the atmosphere with dust pollution.

Many gaseous carbon compounds such as methane, carbon dioxide, carbon monoxide, etc are emitted into atmosphere through biological processes, volcanic eruptions, forest fires, natural gas seepage. Besides, drought, flood, wind may produce pollution in inhaling air.

Man-made Activities:

Domestic Pollution: It is generated by the domestic or household activities or infection or using insecticides for cleaning and maintenance of house. Even though it is not significant comparing with other sources, but it contributes to affect the quality of municipal sewage. Good house keeping methods may help to reduce the pollution.

Industrial Pollution: It is a major pollution generated by the man-made activities. Among the industries, thermal power plants, chemical plants, cement plants, paper milk, textile mills, brick fields and tanneries etc. are the major sources of air pollution.

Traffic Pollution: It is considered as serious as industrial pollution because of rapid and unplanned vehicular transport. The pollution produced by the traffic may be in the form of exhaust gases, particulates and noise etc.

1.2 Aggression:

Everyday people are shocked by the news of occurrences of war, assault, terrorism, mugging, murder, riot, rape hijacking, suicide, child abuse, bombing, acid throwing and clashes between groups in the newspapers, magazines, radio, television and internet. All of those occurrences are associated with aggression. Aggression is one of the most prevalent forms of behaviour problem. Aggressive behaviour involves actions that may result in physical or psychological injury to another. Generally, physical acts such as killing, hitting, kicking, biting etc, and verbal acts such as making

threats, calling names, snubbing, abusing etc, are known as aggressive behaviour. Aggressive behaviour can be direct such as killing, hitting, biting or kicking a person; again it may be indirect such as mob leader may tell his followers commit a violence (Begum, 1990). Aggression is accompanied by intention the behavior of harm. It is deliberately done to inflict harm on the person. For example the act of the dentist who intellects pain of his patients for drilling the cavities of his tooth cannot be considered as an aggressive behaviour. But the assassin who pulls the trigger and misses the victim is an aggressor because he intended to do harm. Thus aggression is not by accident because one individual intends to harm others (Feshbach, 1971; Tedschi, Smith & Brown, 1974).

Aggression leads to harmful and aversive consequences for others. These aversive consequents include both physical harm as well as psychological injury. When someone is assaulted, raped or killed it is physical harm. But the effects of threats, insults, and shunning may be regarded as the consequences of psychological injury. How ever, the reactions to such consequents of physical and psychological harms may vary. Aggression involves a victim who is a nursling participant is the interaction. He or she must avoid the consequences that the aggressor intends to instinct on him or her (Baron, 1977).

Psychologists have defined aggression in different views. Dollard et, al (1939) defines aggression as "any sequence of behaviour the goal response of which is the injury of the person toward whom it is directed". Similarly, Berkowitz (1981) has defined aggression as

behaviour directed as toward the injury of target. Bandura (1973) argues that aggression is a complex event and must take into consideration not only an injurious intent but also social judgments that determine which injurious act are labelled as aggressive behaviour. According to Zimbarco (1969) aggression is physical or verbal behaviour with the intent to injure or destroy.

Geen (1976) has defined aggression as the delivery of a noxious stimulus by one organism to another with intent thereby to harm and with some expectation that the stimulus will reach its target and have its intended effect. Baron (1977) conceived aggression as any form of behaviour directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment.

Through analysis of these definitions, certain peculiar qualities of aggression have been revealed. Firstly, aggression is a behaviour accompanied by inevitable emotions and attitudes towards a target person or group. Secondly, aggression involves actions that harm or injure either directly or indirectly to the target person or group. Thirdly, aggression is a threat to the transgression of social norm which safe guards the basic rights of the weaker person or group from stronger ones.

Psychologists have offered various explanations which have taken the form of different theories of aggression. These theories may fall into following categories ; A. The innate-drive theory of aggression.

B. The frustration – aggression hypothesis. C. The social learning theory of Aggression.

A. The innate-drive theory of aggression: This theory has been proposed by the Nobel Prize winning ethologist, Konrad Lorenz (1966). He held a similar view concerning the nature of human aggression, and argued that aggression is a spontaneous, innate readiness to fight, which is critical for the survival of an organism.

Lorenz advocates, aggression springs from an innate fighting instinct that human beings share with other species. Lorenz also said, this instinct is the natural product of evolution. To support this view, Barash (1982) cited that the reason for instinct development would include hunting, defense of territories, and competition among males for females. For example, the adult males in a troop of baboons constantly challenge each other for dominance. On the basis of this and other observations of numerous animal species, Lorenz concluded that aggression is a genetically based instinct behaviour. Instinct theories and biological theories take the position that people are aggressive by nature.

(1) Instinct Theory: The oldest and most controversial theory of aggression is the psychoanalytic theory, developed by Freud (1939). According to this theory, aggression stems from a powerful death instinct possessed by all human beings. Freud seemed that instincts are lodged deep in the unconscious id. These impulses kept

from entering consciousness by the super ego, nevertheless greatly influence behaviour, and generated within the body. If they are not released periodically in relatively safe and non-harmful ways, they soon reach dangerous level and produces aggressive acts. Many studies have been held with the same view point as the psychoanalytic perspective (Hartman et al, 1949; Anna Freud, 1949). These studies maintained that aggression constantly is generated within the body. Unless the energy is neutralized or discharged in social acceptable action, it could inevitably lead to destructive attack upon others or the self. In other words, sometimes psychoanalytically based psychiatrists and psychologists encourage people to discharge their dammed-up aggressive feelings by ventilating hostility that is referred to catharsis. The idea of catharsis has been little supported by direct evidence but most of the study has shown that it has no effect or actually lead to aggression .(Quanty, 1976 ; Baron, 1983 ; Watson et. al 1984)

(2) Biological theory: Biological theories differ from the earlier instinct theories because they attempt to identify specific biological mechanism that excite people to aggression .Here mentioned only the role of the various parts of brain and of genetic and hormonal factors .Some neural centers give rise to aggression when stimulated (Moyer, 1971).

The hypothalamus and the amygdala seem to be involved in some types of aggressive behaviour. There appears to be a complex chemical and anatomical specification of the brain mechanisms controlling aggression.

Some types of aggressive behavour in humans are often related to brain disorders. For example, brain disease of the limbic system or of temporal lobe has sometimes been found in persons exhibiting a discomfort syndrome characterized by senseless brutality, pathological intoxication, sexual assault or repeated serious automobile accidents.

Research has focused on the relationship between aggression and hormones. Maccoby and Jacklin, (1980) have argued that there are definite sex differences in aggressive behaviour. They also mentioned that males are more aggressive than females because of hormonal difference. Edwards (1971) study has supported it. He has shown that female animals that have been injected with male sex hormones often display increased aggressive behaviour. This argument has been vigorously attacked by other researchers (Eron, 1980; Tiger, 1980), who state that the sex difference in aggressiveness are due to learning and socialization rather than due to differences in hormones. One of the major battle grounds for proponents and opponents of the biological theories centers on whether or not sex-differences in aggression can be found in young children presumably if these sex differences are found only at later age. Learning rather than biological predisposition must play a role in aggressive behaviour. However there were no conclusive answers to this issue.

B. Aggression as an elicited drive: According to this idea, aggression stems mainly from an externally elicited drive to harm or injure others.

This idea was first formulated by the extensive research of some social psychologists (Dollard, Doob, Miller, Mowrer & Sears, 1939), and it is known as "Frustration-aggression hypothesis" This theory proposed that frustration always leads to aggression, and that aggression is always the result of frustration. But the research of Seligman (1975) has demonstrated that frustration does not always lead to aggression such as it can cause depression and lethargy; likewise, aggression to make money does so because they are frustrated.

In a later, Leonard Berkowitz (1969) has proposed a revised frustration-aggression hypothesis which have stated that frustration-aggression hypothesis should be attended in at least three ways. Firstly aggression is a behaviour accompanied by inevitable emotions and attitudes towards a target person or group. Secondly, aggression involves actions that harm or injure others directly or indirectly to the target person or group. Thirdly, aggression is a threat to the transgression of social norm which safeguards the basic rights of the weaker person or group from stronger ones.

Frustration aggression hypothesis defers markedly from instinctual theory of aggression. Berkowitz argues that goal directed behaviour that is blocked (frustration) might combine with other emotional arousal to determine the aggression focused on the individual. This impulsive emotional arousal component is greatly affected by situation cues and can even be regarded as conditioned

responses to external cues (Berkowitz & Frodi, 1977). Thus it appears that it is necessary for there to be some frustrating event that combines with impulsive emotional arousal to determine the level of aggression displayed.

c. Aggression as learned social behavior: In recent years a third theoretical perspective regarding the nature of human aggression, the social learning view, has gained increasing support. This view regards aggression mainly as a specific form of social behaviour, a form, that is both acquired and maintained in much the same manner as many other forms of behavior. According to the supporters of this general position (Bandura, 1973; Baron; 1977; Zillman; 1979) human beings do not show aggression either because of built in urges towards such behaviour or because of aggressive drives, aroused through frustration. Rather they engage in aggressive actions because (1) they have learned such responses through past experiences, (2) either they receive or expect various forms of reward for performing such behaviour and (3) they are directly encouraged to be aggression against others by specific social conditions.

However, Bandura (1973) argues that aversive experiences can lead to emotional arousal and individual considers another external cue, the consequences of the action before determining which course of action to be followed. Some individuals will react to an insult by submission; others may show somatic effects of resort to drugs. The choice depends upon past experience such as various social learning.

On the other hand, Khan (1986) states that when a person is insulated or attacked, his emotional arousal increases, and the indices are sufficiently clear to interpret this arousal as anger. This anger determines, according to Konecni (1975), the level of aggressive behaviour, the more intense the anger, the more aggressive the response, The aggressive response reduces the level of physiological activation (Hokanson, 1970) and in diminishing in this war the feeling of anger causes a decrease in the subsequent aggressive behaviour.

1.3 Anxiety:

Anxiety is a complicated and painful state that is marked by disquiet, alarm or dread and accompanied by some degree of autonomic nervous system arousal. It is an unpleasant feeling that engages tense, worry and diffuse uneasy to person. The anxious person is over sensitive in interpersonal relationship and frequently feels inadequate, insecurity, uncertainty, helplessness and depressed. Commonly an anxious person complains of muscular tension, especially in the neck and upper shoulder region, chronic, mild diarrhea, frequent urination and sleep disturbances that include insomnia and nightmares. He perspires profusely and he shows cardio- vascular changes, such as elevated blood pressure and increased pulse rate and heart palpitation. It is often reflected in strained postural movements.

According to Rowe (1975), anxiety is a diffused feeling stemming from anticipated danger the source of which is unidentifiable. Anxiety has been defined by Zimbardo (1961), as the experience of apprehension, tension and dread without an appropriate casual determinant. According to Altrocchi (1980), anxiety represents a painful state of heightened tension that markedly disturbs psychological equilibrium. Lang (1968) defines anxiety very shortly. He argues that anxiety is an assumed notion, having no physical existence. According to Feldman (1999), anxiety may be a learned response to stressing stimulus. Lang (1969) has offered a three system model which is interconnected to understand the construction of anxiety. According to the three system model, anxiety may be construed in terms of thoughts such as "I am frightened" physical sensation or feelings such as increased heart rate, sweating tension, or behaviours such as avoiding a situation or running way. In fact all human behaviour is based on the avoidance of anxiety. So anxiety is directly or indirectly involved in our everyday behaviour .

Theorists and therapists have expressed different opinions about the origin and nature of anxiety. These opinions can be summarized into the four major theoretical perspectives. These are- A. Biological theories of anxiety, B. Psycho analytic theories of anxiety, C. Behavioural theories of anxiety, D. Cognitive theories of anxiety.

A. Biological theories of anxiety: It is undisputed that a biological process is associated with anxiety. Most of theorists have considered that individual's difference experience of anxiety reflect their different bio-chemical make-up and brain function. To understand the brain and bio-chemical process associated with anxiety it is first necessary to know basic neuro-anatomy. The brain may be divided into three areas. These are the fore brain, the mid brain and the hind brain. The fore brain area is the center of intelligence and reasoning, the mid brain area, or limbic system, and particularly amygdala, are associated with emotions. The hind brain is the most primitive area of the brain responsible for homeostasis. This area includes the hypothalamus and pituitary gland that are the mediator of the biological anxiety and stress responses. Brain is the main parts of the human nervous system, and the neuron is the basic unit of it. It is so important to understand something of the mechanisms of the brains, and transmission of sensory information and responses. Sensory information responses are transmitted along neuronal pathways, like electrical impulses, and nature chemical. These neuronal pathways include several hundred inter connections which may be to other neurons, to muscles, or to glands. In this pathway a neuron interconnects with other cells but do not touch physically, it is called synapse. The synaptic junction must be bridged by the release of chemical transmitters from the nerve ending into the target cell in order for any electric pulse. The effect of different chemical transmitter's cell may be excitatory, inhibitory or modulatory. It is important because low levels of neurotransmitter

substances are linked with the presence of abnormal levels of anxiety and depression. To support this view, there may be considered the use of drugs in controlling anxiety states. The benzodiazepine class of tranquilizers includes diazepam, lorazepam, mimics, the action of gamma-aminobutic acid, the brain's most common inhibitory neurotransmitter. By the gamma aminobutic acid receptors sites, the benzodiazepines allow the action of three major transmitters substances, serotonin, nor-adrenalin and dopamine to become enhanced (Powell & Enright, 1993).

Other theorists have sought to study the possibility of a genetic link in the experience of anxiety. These studies might help to clarify the biological involvement into anxiety. Slater and Shields (1969) have cited 41 percent concordance for anxiety related disorders in monozygotic twins as compared with 4 percent for non-identical twins. Here it is important to note that identical twins often experience "identical environments" as well as genes.

Eysenck (1967) has suggested that individual differences in the experience of anxiety may occur as a result of the inheritance of a particular genetic make-up that predisposes the individual toward high or low emotional liability. A number of studies by Marks & Lader (1973) and Martin (1971) have clearly demonstrated that heredity may play a role in susceptibility to anxiety reaction. For example, some may be born with more sensitive autonomic nervous system than others.

B. Psycho analytic Theories of Anxiety: Psycho analytic Theories of Anxiety had been described in to two titles: Freudian theory and Neo-Freudian theory.

(1) Freudian theory: Freud (1936) distinguished between three different types of anxiety and these are anxiety of reality, moral anxiety and neurotic anxiety. Anxiety of reality is possessed by everyone and refers to the capacity to respond to real danger as it occurs in the external world. Freud states that it is preparing the person faced with danger. According to Freud, the other two forms of anxiety are those which cause psychological problems.

Freud believed that the human personality might be conceptualized as having three basic parts; the id, the ego and the super ego. The id is present from birth and it is the source of all psychic energy. The ego develops out of the id and acts as a restraining force. The super ego may be roughly equated with a super conscience derived from the child's early experiences of reward and punishment and moral values of the parents. All human behaviour stems from the complex inter play of these three psychic forces.

Freud suggests that the first experience of anxiety occurs as a result of birth. Beside this, moral anxiety refers to a fear of punishment by the super ego for failing to abide by normal standards. As a result of actual or potential behaviour directed by the id, such anxiety takes the form of guilt and shame, and neurotic anxiety is a result of the experience of the threat of the id to overwhelm the ego, with the consequent socially unacceptable expression of pleasure-seeking or aggressive behaviour.

(2) Neo-Freudian Theory: These theories were developed in a result of dissatisfaction with what was seen as Freud's overemphasis on the importance of biological impulses, particularly sex. According to Neo-Freudians, human personality develops largely as a consequence of social influences. They believe that anxiety develops not at birth but later. They also regard the actual or potential frustration of dependency needs arousing anxiety.

C. Behavioural theories of anxiety : These theories have been developed on the basis of learning principles. According to this theory, anxiety has been evolved through a process of learning. Watson & Rayner (1920) pioneered the research into a behavioural theory of anxiety. They demonstrated that anxiety, especially, phobia can be acquired through a process of classical conditioning. Mowrer (1947) has extended this work by suggesting a two factor theory for the development and maintenance of phobia. According to the two factor theory, initially fears develop through classical conditioning but reduce through instrumental conditioning. For example, not only a person acquires fear but also subsequently he learns to reduce this fear by avoidance.

Theory of preparedness, which is a combination of biological and behavioural theory, is proposed by Seligman (1971). It may also help to understand how fears become conditioned. It suggests those stimuli for which individuals are biologically `prepared' have been shown to conditioned more rapidly than unprepared stimuli.

Generalized anxiety disorders are developed in a similar manner: a neutral stimulus is associated with an unpleasant experience and the individual subsequently shows a conditioned emotional reaction.

Bandura (1969, agreed that fear and anxiety are learned, but has suggested four possible mechanisms for this learning: Those are classical conditioning, vicarious experience, symbolic instruction and symbolic logic. Bandura mentions that classical conditioning is not enough to develop anxiety, it depends upon accurate perception of the situation. This view attests to the importance of a combination of learning principles together with role of individual's social perception in the development of anxiety disorders. To supports this view, many clinicians (Lief, 1967; Portony, 1959) have noted that anxiety reactions tend to occur in people from a middle class back ground. This tendency may reflect the middle class emphasis on security, status and planning for future as opposed to enjoying the present.

D. Cognitive Theories of Anxiety: Cognitive theories were developed largely as an explanation and treatment approach for depression. More recently they have been applied to the field of anxiety. Cognitive theorists believe that it is not events or problems which cause anxiety or stress but rather it is the person's interpretation of these events that may lead to this problem. According to cognitive theory, anxiety is maintained by the mistaken or dysfunctional appraisal of a situation leading to perception of danger. Beck (1985) has offered that the anxious person's preoccupation with danger is manifested by the

continuous involuntary intrusion of automatic thoughts, either visual images or verbal self-statements, whose content involves potential physical or mental harm.

1.4 Academic Achievement: Academic achievement is an important factor in man's life. It serves as a basic tool for each and every professional individuals specially those who are to be selected for key posts in the public and private sectors. It is an established fact that persons with high academic achievement are considered to show high standard perfarmance in their own line of work in the field of science, economics, technology, education, health, commerce etc. That is why each and every profession gives more importance to a standard academic achievement in selectng individuals for its key posts. An overall development of the country depends on people with high academic qualification. So it is said that education is the backbone of a nation. It is the prime need of the society to make people educated. It is also said that a child to day is the hopes and aspirations of the future of a nation. Therefore every parent, guardian, teacher and the elite of the society feel that each and every child must acquire some standard academic achievement to serve his nation.

The foundation for high academic achievement is based at childhood provided and it should be given every facility to develop his/her innate potentialities and be cared with proper guidance. The educatinal institutions as well as the environment in which the child studies and lives should be made free from all hazards of life.

The merit of the child, the teaching-learning process, the physical environment, mental health and hygiene even the child's relationship with teacher and the surrounding environment play important role in the achievement of academic quality. But environment with any kind of pollution is sure to have some adverse effect in the child's learning ability (Nishat, 2001)

In general, children's total marks in the annual examination are considered as academic achievement.

ADVERSE EFFECTS OF AIR POLLUTION:

An address of the honorable minister of Bangladesh Govt, Ministry of Environment, and the Annual Report of the World Bank has expressed the seriousness of air pollution. Both said that more than 5000 people die in Dhaka city every year because of air pollution (The Daily Inquilab,9 February,2002). Yobaida Khorana in the World Bank said on a seminar in Dhaka, about 350000 children died of air pollution (The Daily Prothom Alo,17 may,2006). Statistical report about the patients of different hospitals in Dhaka city stated that generally most of the children are affected with air pollution and suffer from many kinds of diseases. Different air pollutants affect on human beings. When carbon monoxide is inhaled, it passes through the respiratory system and combines in the lung with the haemoglobin in the blood to carboxidehaemoglobin, and reduces the ability of the haemoglobin to carry oxygen to the tissues. The affinity of carbon monoxide is some 200 times higher than that of oxygen for attacking itself to the haemoglobin so that low levels of carbon monoxide can still result in high levels of carbon monoxide (Sethi & others, 1991).

Carboxyhaemoglobin levels of 2 to 5 percent effects are found in the central nervous system, and levels greater than 5 percent are found cardiac and pulmonary function changes. There is evidence that carbon monoxide concentrations are associated with excess mortality rate (Hexter & Goldsmith, 1971). Another study has been conducted by Cohen et al.(1969), and percipienced that a relationship exists between

ambient carbon monoxide levels and heart attacks. There is ample evidence that ambient air concentrations of carbon monoxide in major traffic areas are high enough to produce significant effects on health and created many kinds of health hazards such as heart disease, asthma (Das,1999).

The equilibrium of carbon-dioxide may be upset drastically by the enormous increase in the combustion of fuels during this present time. The indirect effects of carbon-dioxide on human beings forms a blanket of insulation around the earth and changes its temperature, which affects all living organisms.

Sulphur dioxide is causing severe bronchospasms at relatively low levels of concentration.

Animal mortality studies indicate that nitrogen–dioxide is more toxic than nitrogen oxide. Nitrogen-dioxide is known to cause occupational disease, it also affects to eye and nasal irritations.

Exposure to the high concentration of sulphur dioxide causes pronounced choking sensation and severe distress (Sethi, 1991). Exposure can also cause serious inflammation of conjunctiva of the eyes and irritation of the nose and throat. Moist air and fogs probably increase the danger of sulphur dioxide greatly.

Low concentration of hydrogen sulphide causes headache, nausea, lassitude collapse, comma and death. In 1950, peoples of the small town Poza Rice, Mexico were affected from this gas and 320 people were hospitalized and 22 died.

High concentration of tropospheric ozone has deleterious effects on human health. Tropospheric ozone is a potent green house gas and may arise significantly to the problem of global warming.

Most of the atmospheric lead comes from automobile fuel. Presence of excessive amount of lead in inhaling air affects on aggression, paralysis and the development of intelligence, as shown by Hileman (1987). Similar studies were supported it (Roy,1992; Das,1997).

Urban residents have greater level of lead than rural residents (Sethi &Iqbal, 1991).Kaiser et al (2001) have conducted a study in Dhaka city and shown that blood lead levels in children are still high. Beryllium has shown to damage skin and mucous membrane. It may cause cancer in lungs and bone marrow.

The serious health effect of bismuth is kidney and liver damage in large doses.

Cadmium is dangerous because very small dose of cadmium can cause to vomiting, diarrhoea, colitis and continuous exposure and causes hypertension and cardio-vascular disease.

Human beings inhale nickel as nickel tetracarbony and are affected with respiratory disorders, lung cancer, etc.

Most of the hydrocarbon vapours have health implications such as eye and respiratory irritation.

Insecticides can affect the central nervous system and may attack other vital organs. The serious health effects of radio active isotopes are

anaemia, leukemia, and cancer. It causes genetic defects. It also shortens the life span of an individual.

Dust produces respiratory diseases like silicosis, asbestosis etc. The effects of cigarette smoking are more severe than effects of air pollution as far as causing lung cancer or chronic pulmonary disease when the whole population is concerned.

The economic valuation of the air pollution revealed that between 121 to 353 million dollars per year can be saved in Dhaka as health cost if the pollution level is reduced to the proposed national standard (Khaliquzzaman, 2005).

Justification of the Study:

Bangladesh is a country with high density of population. Its cities and towns are over crowded. Hence the air pollution in a small area causes a greater but sustained physical and psychological depreciation to a large number of people which creates unbearable condition for city dwellers. The causes by which the air is polluted are present in almost all cities and towns. Besides the lack of consciousness of our people about the consequences of air pollution is very apparent. Moreover, there is no accurate measure or statistics about sustaining loss about who, where, how are affected. Therefore the present study is a humble attempt to investigate into how much our school children are affected by such air pollution and to observe to what extent they are affected by aggression and anxiety, and how their academic achievements are affected.

Objectives of the Study:

The main objective of the study is to find out the adverse effect of air pollution on children's aggression and anxiety, and its relation to their academic achievement. More specifically the objectives of the study are identified as follows.

i. To identify the school children who are affected with high air pollution.

ii. To find out the relationship of air pollution with aggression and anxiety of the school children.

iii. To find out the relationship between air pollution and academic achievement of school children.

Hypothesis of the Study:

In view of the above discussion and objectives, the following hypotheses were framed:

i. Children who are highly affected with air pollution are likely to be more aggressive than those who are low affected.

ii. Children who are highly affected with air pollution are likely to be more anxious than those of the low affected.

iii. Children affected with low air pollution would show better academic achievement than high affected ones.

CHAPTER- 2
Methods

THE METHOD

2.1 General Plan of research

The research plan involves a survey with questionnaires. For this purpose, the Air pollution scale for children (APSC) as developed for this study and the Personality Inventory for Children (PIC) were administered on 2000 parent-child dyads to collect necessary data. The Academic Achievement as results of annual examination for two consecutive years of the children was collected from their respective school records. The subjects were divided into two groups on the basis of report of the Department of Environment (DoE) about the state of air pollution in Dhaka Metropolitan City. One from high air polluted areas and the others from low air polluted areas were selected. After administering the scales, all the data were processed through computer programme using necessary statistical techniques

2.2 The Sample

The study was carried out on a sample of 2000 school going children in two types of residential areas of Dhaka Metropolitan City. One was the low air polluted area and the other was high air polluted area. These areas were selected on the basis of the report of DoE (2005) about the state of air pollution in Dhaka Metropolitan City. According to the DoE report, the north–eastern part (Cantonment-Gulshan-

Baridhara)of Dhaka city is literally better than other areas in terms of air quality (Dhaka city state of Environment, 2005). And the air quality of the old part of Dhaka city is worse. This report has expressed that Hazaribug, Lalbug, Kotwali, Suttrapur, Motijhil, Dhanmondi, Mohammadpur areas are the more air pollution prone areas and Uttra, Baridhara, Cantonment, Gulshan ,Badda, Khilgoan are the less air polluted areas (Pollution zone of Dhaka city by pollution type -58). The present study considers Gulshan,Uttara,Baridhara and Badda as low air polluted areas and Hazaribug, Lalbug, Kotwali and Sutrapur were considered as high air polluted areas. The total number of subjects (2000) were equally divided into two groups (1000 from schools of high air polluted area and 1000 from schools of low air polluted area).The children were from classes VIII, IX & X and of 12 to 15 years of age. The list of children was collected from the headmaster of the respected schools from which every third was selected for the sample needed. The same procedure was followed to select the necessary sample from both areas. Initially, the APSC was administered on subjects of both areas. But due to certain unavoidable circumstances such as ambiguous home address, failure to collect school-results, incomplete test result sheet etc answer sheet (responder) of 152 children of high air polluted area and of 124 children of low air polluted area were rejected. Finally, 848 children (410 boys and 438 girls) from high air polluted areas and 876 children (425 boys and 451 girls) from low air polluted areas were retained for final study. Sample distribution on area wise is shown in the table below.

Table-1: Sample distribution on area wise.

Type of area	Name of area	Number of children	Total
High air polluted area	Hazaribagh	330	848
	Lalbagh	180	
	Kotwali	182	
	Sutrapur	156	
Low air polluted area	Gulshan	340	876
	Uttara	85	
	Barridhara	188	
	Badda	263	

2.3 Measuring Instruments

The selection of measuring instruments for the study depends on the object of study, using sample, duration of the study, competence of investigator, ethical consideration etc. In view of these considerations, data were collected through two questionnaires in this study. The Air Pollution Scale for Children (APSC) was used to measure the children's affected level with air pollution and the Personality Inventory for Children (PIC) was also administered on the children's parents to measure children's aggression and anxiety. Following are description of the two questionnaires:

2.3.1 The Air Pollution Scale for Children (APSC):- APSC is a five - point scale in the Likert type. It was developed by the investigator himself. The development of this scale followed a number of stages.

Initially the investigator collected different types of psychological and physiological problems of the children who were affected with air pollution. These behavioral problems were collected on the basis of various diseases caused by air pollution and its adverse effect on the children in Dhaka city. The bases include recent researches, specialist doctors' opinion, reports in newspaper and magazines, opinion of the environmentalists, annual report of DoE (2005) etc. Thus a list of 65 such behavioral problems was prepared. The list was distributed to three child health practitioner medical specialists. The specialists sorted out the list separately and ultimately 42 problems were retained. The medical practitioners also reported that these problems may vary from one area to another.

After sorting out the problems the investigator prepared statements for each problem. Thus 42 statements were prepared on 42 selected problems.

In preparing the statements the following precautions were taken:

i. The statement which referred to the past rather than present was avoided.

ii. Factual statements were not excluded.

iii. The statements irrelevant to the psychological or physiological conditions were excluded.

iv. The language of the statements was made very simple, clear and direct.

v. The statements were short and rarely exceeded twenty words.

vi. Attention was given to sentence structure and choice of appropriate words.

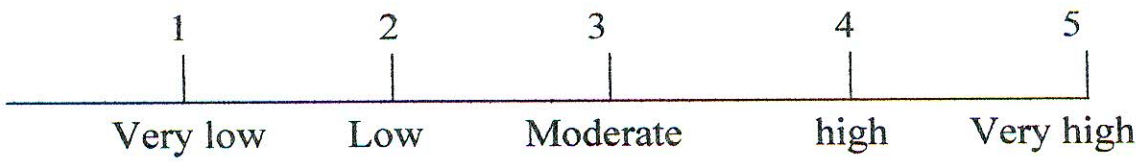
vii. Unknown vocabulary words were not used.

viii. Negative statements were avoided.

ix. Double meaning statements were excluded.

x. Statements which were likely to be endorsed by almost every one or by almost none were avoided.

A 5-points scale was provided with each statement. The subject was required to read each statement carefully and decide to what extent the idea expressed in the statement was applicable to himself/herself to evaluate the appropriateness of each item with the specific response by marking one of the number of scale points. The number of scale points indicate the intensity of affected level with air pollution were as follows.



Having thus prepared the list of statements, each of the statements was thoroughly scrutinized by three judges .They included the profession of teaching psychology. First of all, Each judge examined the structure of

each statement, and then determined whether the idea expressed in it was appropriate or not. Thus the three judges scrutinized the construction and style of expression of the statements independently. In some cases arrangements were made to meet the three judges together to reach an agreement with the statement after a modification in the structure. Thus in final assessment only 42 statements were retained in the original list of the inventory for pilot study.

The Pilot Study

A pilot study is an essential part for the construction of any scale. It helps to remove the operational defects of the scale in the final form. Having prepared the questionnaire, the pilot study was conducted using 42 items. The main purpose of this study was to find out the clarity and the differentiating power of the items. The basic consideration was to see whether an item could discriminate a high air pollution affected child from a low air pollution affected one.

Sample of the pilot study: The pilot study was carried out on a small sample of 100 subjects (58 boys and 42 girls) of the two schools of Hazaribugh in Dhaka city. These two schools were situated in high air polluted area in Dhaka city, and this selection depended on the basis of the report of DoE. Children who were selected in the sample were the students of classes Viii, IX, and X and their age ranged from 12 to 15 years. The subjects were randomly selected from 100 Students of these two schools.

Application and Scoring: The prepared list of 42 items as a complete questionnaire was distributed to each subject. The subject could not understand the view of its application. To the right of each statement was provided a 5- point scale. The scale points ranged from 1 to 5 expressing the level of agreement as "very low"; "low", "moderate", "high" and "very high" respectively. A written instruction was provided on the upper portion of the first page of the questionnaire in which the respondents were instructed to indicate their agreement by marking a number on the scale points. In this way each subject completed the questionnaire in the presence of the interviewer. After this, the questionnaires were scored in following way, a credit of 1 was given for ``very low'' response, 2 for "low", 3 for "moderate", 4 for "high" and 5 for "very high" response. Thus for 42 items the total score ranged from (42x1)=42 to (42x5)=210. The score above mean was considered to be highly affected with air pollution and that of below was considered to be less affected with air pollution.

Item Analysis & Item Selection: In the item analysis and item selection, both the methods of finding the discriminative power (DP) of each item and the correlation method for internal consistency of the items were followed.

When the method of finding the DP of each item was used, the scores obtained by each subject on all items were summed up and the total scores for all the subjects were arranged in order from the highest to the lowest. The first and the fourth quartiles of these score were calculated. Hence subjects who fell below Q1 and those who fell above Q3 were sorted out and the means for each item were calculated. Moreover the scores for each subject who fell below Q1 were totaled for all the items and averaged out. Similarly the score for each subject who fell above Q3 were totalled for all items and averaged out. Thus two means for each item, of both the highest (above Q3) and the lowest (below Q1) were found out. This two means of each item were compared for item selection. The difference between two means obtained by this method is known as the DP - This method clearly indicated that the item to be selected should have at least a DP of above 0.50. The DP for each item is shown in table below :

Table-2: Showing the DP of each item of APSC.

Item no	Mean (above Q3)	Mean (below Q1)	DP	Item no	Mean (above Q3)	Mean (below Q1)	DP
1	1.92	0.97	0.95	22	3.04	1.36	1.68
2	3.20	1.64	1.56	23	3.48	1.20	2.28
3	2.40	1.16	1.24	24	2.32	1.20	1.12
4	3.32	1.24	2.08	25	2.08	1.60	1.02
5	3.48	2.24	1.24	26	3.44	1.52	1.92
6	3.32	1.32	2.00	27	3.88	1.60	2.28
7	2.92	1,24	1.68	28	3.48	1.56	1.92
8	3.48	1.52	1.96	29	4.12	1.44	2.68
9	3.72	1.76	1.96	30	4.04	1.44	2.60
10	2.48	1.50	0.98	31	2.68	1.08	1.60
11	3.56	1.72	1.84	32	3.08	1.68	1.40
12	2.88	1.92	0.96	33	2.36	1.16	1.20
13	2.96	1.36	1.60	34	3.12	1.48	1.64
14	3.32	2.35	0.97	35	2.32	1.00	1.32
15	2.64	1.16	1.48	36	3.28	1.56	1.72
16	3.04	1.56	1.48	37	2.84	1.04	1.80
17	3.68	2.04	1.64	38	3.44	1.40	2.04
18	2.96	1.16	1.80	39	2.92	1.04	1.88
19	2.16	1.12	1.04	40	2.80	1.16	1.64
20	2.76	1.00	1.76	41	3.08	1.44	1.64
21	3.64	1.20	2.44	42	3.80	2.74	1.06

In the correlation technique of item analysis, the total score for all the items was correlated with each of the actual item score with the formula of tetra-chotic co-efficient of correlation. Following this technique the items whose score showed high positive correlation with the whole test score, were selected and items with negative and low correlation were discarded. For this purpose, the score of all items for all 100 subjects were totalled separately, and calculated the value of the co-efficient of correlation of each items with the whole test and level of their P values is shown in the table below :

Table-3: Showing the co-efficient of correlation of each item of APSC.

Item No	Co-efficient of correlation	Level of P	Item No	Co-efficient of correlation	Level of P
1	0.44	.001	22	0.42	.001
2	0.45	.001	23	0.55	.001
3	0.57	.001	24	0.66	.001
4	0.67	.001	25	0.42	.001
5	0.39	.001	26	0.61	.001
6	0.72	.001	27	0.36	.001
7	0.79	.001	28	0.58	.001
8	0.64	.001	29	0.65	.001
9	0.50	.001	30	0.61	.001
10	0.41	.001	31	0.52	.001
11	0.70	.001	32	0.56	.001
12	0.35	.001	33	0.37	.001
13	0.60	.001	34	0.48	.001
14	0.54	.001	35	0.56	.001
15	0.53	.001	36	0.62	.001
16	0.66	.001	37	0.36	.001
17	0.41	.001	38	0.65	.001
18	0.68	.001	39	0.56	.001
19	0.72	.001	40	0.58	.001
20	0.47	.001	41	0.71	.001
21	0.45	.001	42	0.52	.001

On the basis of these two processes of item analyses all 42 items were retained in the final list of the scale. Because DP for all items were 0.94 and above, and correlation co-efficient of all items were 0.35 and above which showed high positive correlation. Thus these 42 items were selected in the list to constitute the scale in final form.

Validity of the Air Pollution Scale for Children (APSC): Validity of any psychological test or inventory is defined as "The extent to which the test or inventory measures what it purports to measure". Determination of validity involves an estimate of correlation between the scores on the test or inventory with some measure of pure criterion. But unfortunately such pure criteria are not available. So the researcher have to depend on the self-rating or rating by peers in place of pure criterion measure (Afsaruddin, 1987).

In developing this scale due consideration was given to different factors in determining validity. Firstly, all the items of this scale were sorted out on the basis of various relevant literature and studies and on the comments of medical practitioners. Moreover the DP value of these associated items between the high and the low air polluted groups was also estimated through items analysis. This procedure of item selection provides construct validity.

Secondly, the items prepared in the form of statements for each of the behavioural problem of the child affected with air pollution and the selected items have been evaluated in two phases by experts. In the first phase, three child health medical practitioners sorted out 42

appropriate behavioral problems out of 65 and in the second phase, three professors of psychology earlier evaluated the statements which formed the basis of 42 behavioral problems. All items were judged by the experts independently. Thus the theoretical face validity of the scale has been established as far as possible.

Thirdly, the long duration of the study makes the determination of the concurrent validity possible. The Validity of the Bell Adjustment Inventory was established by rigorous follow up studies over period of 30 years. Similarly validity of the Personality Inventory for Children (PIC) was established over 30 years of studies. For the present scale, it was not possible to make any attempt to make such a long study for validation. Only short investigation was conducted to see the validation of the present scale. For this purpose the two procedures have been followed. One of them, the co-efficient of correlation has been calculated between obtained scores of APSC of 35 children and the doctor's ratings of them. The co-efficient of correlation was found to be 0.58 which was significant at 0.01 level. In this way, 35 children were selected from "Torun Shangha Biddya Niketon" at Hazaribagh in Dhaka city and they were randomly selected from 105 children who were the students of class VIII, IX and X, and their age ranged from 12 to 15 years. Two doctors (Clinician) examined each of the selected children to indicate their affected level with air pollution. The affected level with air pollution was rated by using a 7- point rating scale which ranged from 0 to 6. The scale points were 0 = Absent, 1= Very low,2= Low, 3= Moderate, 4= High, 5= Very high and 6= Severe. The doctors

interviewed each child separately to indicate their affected level. Both ratings of the doctor were averaged out for each child. Besides, the APSC was administered on these 35 children and their scores were correlated with the doctors' rating and correlation co-efficient was found to be 0.58 which was found significant at 0.01 level ($P<0.01$). The doctors' ratings and the APSC's scores of 35 children are presented in the table below:

Table-4: Showing Doctors' rating and APSC scores of 35 children

Subjects	Doctor's rating average	Score of the APSC	Subjects	Doctor's rating average	Score of the APSC
1	3	84	19	3	98
2	4	99	20	4	100
3	4	110	21	2	73
4	2	73	22	4	108
5	4	98	23	3	80
6	4	99	24	3	100
7	3	85	25	3	110
8	3	102	26	3	84
9	3	97	27	3	85
10	3	83	28	2	75
11	2	74	29	3	90
12	5	108	30	3	103
13	4	100	31	4	91
14	3	85	32	3	89
15	4	98	33	2	73
16	3	79	34	3	102
17	3	85	35	3	90
18	3	103			

On the other hand, the scale was administered on two separate groups of children. They were randomly selected from high air polluted areas and low air polluted areas. The two areas were selected on the basis of the report of DoE. The mean difference in scores of children between high and low air polluted areas was significant. Seventy three children were selected from "Alatunnesa High School" in Badda in Dhaka city and they were selected randomly from 210 children who were students of classes VIII, IX and X and their age ranged from 12 to 15 years. The APSC was administered on these 73 children and scored. The scores of these 73 children were averaged out. Similarly 66 children of "Torun Shangha Biddya Niketon" in Hazaribagh in Dhaka city were selected from 190 children, and the scale was administered earlier on them. The score of these 66 children on APSC were averaged out. It is important to note that the selected 73 children of "Alatunnesa High School" were considered as the representative of low air polluted areas and selected 66 children of " Torun Shangha Biddya Niketon" were considered as the representative of high air polluted areas. After this, the mean scores of these two groups of children were compared through t-test. The results are shown in the table below:

Table-5: Difference in mean score of high and low air polluted areas' children on APSC.

Category of Ss	Number (N)	Mean (X)	SD	Df	t-value	Level of P
High air polluted area	66	106.9	21.5	137	5.75	0.001
Low air polluted area	73	90.85	13.36			

Both procedures have ensured the concurrent validity of the scale. Moreover the researcher has computed inter-item correlation which ranged from –0.5 to .83 and item – total correlation ranged from 0.35 to 0.79.

Reliability of the APSC: Reliability is the consistency of any test or scale which measures what it intends to measure. It is an agreement of scores obtained by the same individuals in different occasion or with different sets of equivalent items (Anastasi, 1964). Such a criterion is an essential part for any good test or scale. So any test or scale to be useful must possess such reliability and therefore special attention should be paid to this aspect in developing a test or scale for measuring any or more psychological or behavioral aspects.

Different method is used in estimating reliability of a test. In determining the reliability of the present scale, the odd-even method and the test retest method were used. To determine the split-half reliability co-efficient between the odd and the even item division the S-B formula was followed. It was not possible to prepare a parallel form of the present scale at this moment and the items could not have been divided into odd-even item division on the basis of their difficulty. But the items were selected on the basis of their DP value. Therefore the items of the scale were arranged in order from their highest to the lowest DP value and then divided into two equal halves with the odd-even number. Thus the correlation of scores on APSC between these two halves was estimated and the reliability co-efficient was found to be 0.94 ($P<0.001$) on a sample of 100 subjects. The indices of reliability co- efficient (Garret, 1966) of this scale was computed to be 0.87. These indices of reliability show the highest correlation which the scale is capable of yielding in its present form.

Table-6: The split-half reliability co-efficient of the APSC.

Variables	N	df	r	P
The score of odd items & The score of even items	100	98	0.94	0.001

To estimate the reliability through test-retest method, the APSC was administered on 94 children who were selected from three schools of different areas in Dhaka city and their age ranged from 12 to 15 years. They were from classes VIII, IX & X and they were selected on a systematic sampling procedure. The scale was administered on the sample of 93 subjects twice over a period of two weeks interval. Thus a test retest reliability of the scale was found to be 0.64 and it was significant. The test retest reliability is shown in the table below :

Table-7: The test-retest reliability co-efficient of the APSC.

Variables	N	df	r	P
APSC score in1st session & APSC score in 2nd session	93	91	0.64	0.001

Thus both the split –half reliability and the test –retest reliability of the APSC were found statistically sound and thus the scale became a highly reliable instrument.

Norm of the APSC: A norm actually represents the scores of the standardization sample on the test. It represents what a group of individuals actually did on the test. Each test or measuring scale provides a norm for interpretation of individual score. Most of the tests or scales provide the norm either in terms of percentile points or percentile ranks. Very few provide a transformed standard score. In the present scale, no norm has been established. But data have been collected and their statistical analysis is on the process.

2.3.2 The Personality Inventory for Children (PIC). The Personality Inventory for Children (PIC) provides a comprehensive description of child behaviour, affect and cognitive states as well as family characteristics for children and adolescents of ages 3 though 16 years. The PIC has been used in the assessment of older adolescents and young adults. The PIC was developed by Wirt, R.D, Lachar, D., Klinedinst, J.K and Seat P.D. in 1977. The revised version in 1989, the Inventory has been done short into 420 items from the longer 600 items version. In general, the absence of the 180 items do no alter the usefulness of the inventory, but this changes have made the PIC a more flexible and accessible instrument. Reliability, Validity and Norm of the present version of the PIC are the products of over 30 years of research and development.

Actually, the PIC consists of a large number of scales for which reliability, validity and norm have been developed separately over a period of many years of research. Notes have been added to indicate that norms of all sub scales have been developed in accordance with age level and sex. Included sub scales of the PIC are listed below:

1) Lie Scale (L)
2) Frequency Scale (F)
3) Defensiveness Scale (DEF)
4) Adjustment Scale (ADJ)
5) Achievement Scale (ACH)
6) Intellectual Screaming Scale (IS)
7) Development Scale (DVL)
8) Somatic Concern Scale (SOM)
9) Depression Scale (D)
10) Family Relation Scale (FAM)
11) Delinquency Scale (DLQ)
12) Withdrawal Scale (WDL)
13) Aggression Scale (AGN)
14) Psychosis Scale (PSY)
15) Adolescent Maladjustment Scale (AGM)
16) Hyper Activity Scale (HPR)
17) Social Skills Scale (SSK)

18) Anxiety Scale (ANX)

19) Asocial Behaviour Scale (ASO)

20) Cerebral Dysfunction Scale (CDY)

21) Ego Strength Scale (ES)

22) Excitement Scale (EXE)

23) Internalization Scale(INT)

24) Externalization Scale (EXT)

25) Infrequency Scale (INF)

26) Introversion-Extroversion Scale (I-E)

27) K-Scale (K)

28) Learning Disabilities Prediction Scale (LDP)

29) Reality Distortion Scale (RDS)

30) Sex Role Scale (SR)

31) Social desirability Scale (SD)

32) Somatization Scale (SM)

33) Delinquency Prediction Scale (DP)

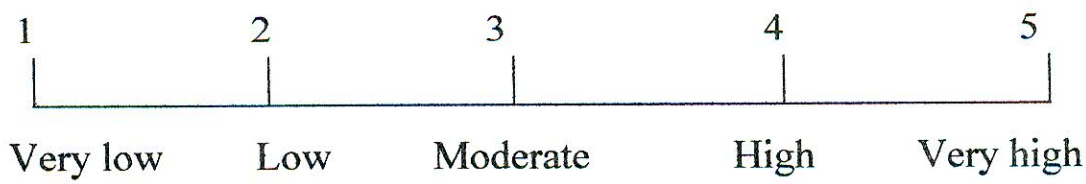
The four of the earlier described 33 scales such as Lie scale, Frequency scale, Defensiveness scale and K-scale, are used to identify the tendency of parents falsify about their child's behaviour during an evaluation. The rest of 29 scales are used to measure the different kinds of personality characteristic of the children.

In the present study the two sub scales for measuring aggression and anxiety of the children have been used. These two scales are described briefly.

Aggression Scale (AGN): The rationally developed aggression scale (Klinedinst, 1972,1975) contains 18 items that are all scored in the 'true' direction. Items reflect unsocialized, maladaptive aggression such as temper- tantrums, cruelty and excessive use of projection of blame. The Darlington (1964) procedure was employed to select the items of this scale. Kelly (1982) found that AGN significantly correlated with the Aggressive scale of CBCL.

Anxiety Scale (ANX) : The Anxiety scale was developed by Klinedinst (1972.1975).This scale contains 30 items which were nominated by judges as measuring the various manifestations of anxiety such as limited frustration, Torrance exaggeration of problems and concerns, worries that reflect parental concerns, behavioral physiological correlates of anxiety, irrational fears and worries and nightmares. Klinedinst (1975) refined his original 43-item scale (1972) but maintained the same level of internal consistency. This scale reflects brooding, moodiness, fearfulness, worries, poor self concept sensitivity to criticism, specific fears, general seriousness, and pessimism, 23 items of this scale are scored in 'True' responding and 7 items are scored in 'False'.

The PIC was translated into Bengali and reliability and validity of two sub scales have been established by the researcher himself. At first, the researcher translated the 420 statements of the PIC into Bengali. The matching of style and expression into Bengali with English (version PIC) was ascertained by 5 judges (two professor of English and three professors of psychology). They examined the structure and the style of expression of each of the Bengali version of the statements, with that of its English version, on a 5- points scale from "very low" to very high". The judges' evaluated appropriateness of each statement with the specific responses by marking one of the number of scale points provided against each. The numbers of scale points indicating the degree of the relationship between two languages of the statements were as follows:



The 5 judges gave their judgment separately. Their judgment was averaged out for each statement. The statements with an average score 3 and above were selected. And other statements which yielded average score below 3 were selected by meeting the 5 judges together to reach an agreement after a modification. Thus 420 Bengali versions of the PIC statements were included into Bengali version of the PIC.

Reliability of the PIC: The reliability and validity of Bengali version of 420 statement of the PIC was determined by the researcher himself. The scale was used on a sample of 90 parents of 90 children of class viii to x with an age range of 12 to 15 years. Since the behaviour problem is evaluated by mother, the scale was administered on the mother of these children with an interval of two weeks. The test-retest reliability co-efficients of these scales were found to be 0.87 for Aggression Scale and 0.81 for Anxiety Scale. Both reliability Co-efficients were significant at .01 level (P<.01) with a df of 88.

Table-8: Test-retest reliability co-efficient of the Bengli version of Aggression and Anxiety Scale.

Scales	N	r	df	P
Aggression	90	0.87	88	0.01
Anxiety	90	0.81	88	0.01

Validity of the PIC: The researcher has also determined the validity of the translated Bengali version of PIC's two sub scales. In estimating the concurrent validity of the Aggression Scale and of the Anxiety Scale, the CMAS and the MAB were administered on 90children who were randomly selected; and the Bengali version of PIC was administered on their parents. Measure of Aggressive Behaviour (MAB) developed by Biswas (1995) might be used to measure the aggression of Bangladeshi children. The reliability and the validity of this scale are 0.63 and 0.65 respectively. And the Children form of the Manifest Anxiety Scale (CMAS) was developed by Castaneda, McCanless and Palermo (1956). The original form of CMAS was translated into Bengali by Afrose (1982) which is now widely used in Bangladesh to measure the anxiety of children. The reliability and the validity of the Bengali version of CMAS are 0.84 and 0.85 respectively. After calculating the scores of the scales, the Aggression Scale was correlated with that of Biswas`s Measure of Aggressive Behaviour Scale and the Anxiety Scale was correlated with CMAS. And the co-efficients of correlation were found to be 0.69 and 0.81 respectively. In this way, the concurrent validity of the Bengali version of Aggression Scale of PIC has been established with the Measure of Aggressive Behaviour (MAB) and found to be 0.69. Similarly the concurrent validity of the Bengali version of Anxiety Scale of the PIC has been established with the CMAS and the co-efficient of correlation was found to be 0.81.

Table-8: Concurrent validity in terms of co-efficient of correlation of Aggression scale and Anxiety scale of PIC with MAB and CMAS :

Variables	N	df	r	p
Aggression scale's scores & MAB's scores	90	88	0.69	0.01
Anxiety Scale's scores & CMAS's scores	90	88	0.81	0.01

Application and Scoring:

The 420 item inventory of PIC was administered on the parent or parent surrogate who has had close contact with the child. Each item of the inventory was answered either "T" or "F" by respondent. If a statement was true or mostly true for the child, the respondent blackened the circle under 'T' on the answer sheet, and if the statement was false or not usual for the child, the respondent blackened the circle under 'F' on the answer sheet. In marking their answer, respondents were encouraged to try to answer all the items and to proceed as quickly as possible. In addition to this, space was provided in the answer sheet for identifying information including the child's name, ID number, date of birth, age, sex, testing date, grade, school and respondents name and relationship to the child.

Three methods of administration and scoring are used for the PIC such as: (a) paper- and pencil administration with hand scoring (b) scan able Answer sheets which are sent to WPSTEST REPORT for processing and (c) micro computer diskette for on line administration. The first scoring method was used in the present study. This method required the use of an Answer sheet for administration and scoring keys for obtaining raw scores. To begin scoring, the transparent scoring key was placed over the completed Answer sheet . For every response that occurred within a circle on the scoring key, score of 1 point was given. The total number of points for all the responses that corresponded to the circle on the scoring key for a given scale was the total raw score for that scale. This number was written on the back side of the answer sheet.

Procedure: In order to collect necessary data, the APSC was administered on the selected 2000 children at classes VIII, IX and X of fifteen different schools of high and low air polluted areas in Dhaka City, and Bengali version of the PIC was administered on the parents of those selected children. Necessary data were collected in two phases one from the children and the other from their parents.

In the first phase, having preparation and necessary permission from the school authorities, the researcher went to the class room with a teacher. The teacher introduced the researcher to students of the class and explained them the purpose of his visit. The researcher talked to

them for a few minutes to ensure a well-rapport. Later on, a set of questionnaire was distributed to the selected subjects. The subjects filled up the questionnaire according to instruction given on the front page of the questionnaire. After the questionnaires were filled up, the researcher collected them and the subjects were given thanks for their participation and co- operation. Besides, the researcher went to the office of the school with proper permission from the authority to verity the results of annual examination of the subjects from their school records. In this way, data were collected from children and from their school records of all.

In the second phase, data were collected from mother or father of the children who participated in the study at the first phase. After knowing the home address of the children from their personal information, the researcher or his trained associate personally visited their homes with Bengali version of the PIC. Bengali version of the PIC was administered on father or mother who agreed to participate in the study. After explaining the purpose of his visit, the researcher or his associate gave him or her, a set of questionnaire and answer sheet.

Besides, the researcher collected information about the following six questions from the parents. The children whose parents responded 'Yes' with any or more of that six questions, were excluded. The questions were

(i) Is your child over-protected or neglected?

(ii) Does your child like more action movie?

(iii) Are you always anxious?

(iv) Does child's mother stay out of the home for long time?

(v) Are you separated or divorced?

(vi) Was child's father or mother a prisoner?

The same way was followed in collecting the data from other parents. After collecting the data, the scores were analyzed with appropriate statistical techniques.

Norm of the PIC: Norm of all sub scales of the PIC have been developed in accordance with age and sex .Although the PIC is administered on 3 to16 years age group children but separate norms for ages 3 through 5 years and of ages 6 through 16 years children have been developed separately for each sex. In Bengali version of the PIC, no norm has been established but data have been collected and the statistical analysis is in process.

Assessment of Academic Achievement: The converted G.P.A. of the last examinations for two years were averaged out and considered as academic achievement of the children.

CHAPTER- 3
Results

RESULTS

After scoring the data have been analyzed into two different ways. At first the means of aggression scores, anxiety scores and academic achievement scores of the children in the high and the low air polluted areas were found out, and compared the means between both areas using t-test. Secondly, comparison was also made on aggression, anxiety and academic achievement scores between the children affected with high and low air pollution. To do this, APSC scores of the children in high air polluted areas and low air polluted areas were arranged in order from highest to lowest, separately. Then the upper 25 percent and the lower 25 percent children were considered as the high affected group (HAG) and the low affected group (LAG) respectively for both areas. Similarly APSC scores of all children (high and low air polluted areas together) were arranged to determine the high affected group (HAG) and the low affected air pollution group (LAG) for the whole. Then comparisons on aggression scores, anxiety scores and academic achievement scores between the children of high affected (HAG) and low affected air pollution group (LAG) were made by using t-test.

The purpose of different ways of analysis was to determine the levels of air pollution affect. In the first way of analysis, the subjects from high air polluted area were considered as high affected group (HAG). Similarly, the subjects from low air polluted area were considered as low affected group (LAG). But living in the same place,

does not mean that all are equally affected with air pollution at same level. Living period in that area, height of the living house, prevention capacity etc may influence the affected level of air pollution. So the second way of analysis was a necessity.

The results of the present study have been shown in the following sub-headings.

3.1: Aggression of the children of high and low level affect with air pollution:

One of the main objectives of the present study was to find out whether there was any difference in aggression between the children affected with high air pollution and the children affected with low air pollution. For this purpose, means of aggression scores of the PIC were computed separately for these two groups, and t-test was used to investigate whether the difference between two means of aggression was significant.

Table-10: Comparison on aggression between children of high level affect with air pollution (HAG) and children of Low level affect with air pollution group (LAG)

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (area basis)	848	3.46	1.313	1722	4.68	P< 0.001
LAG (area basis)	876	3.18	1.165			

The t value presented in the above table shows that there is a significant difference in aggression between the children of high affected air pollution group (HAG) and Low affected air pollution group. It means that the children of high air polluted are more aggressive than the children of low air polluted.

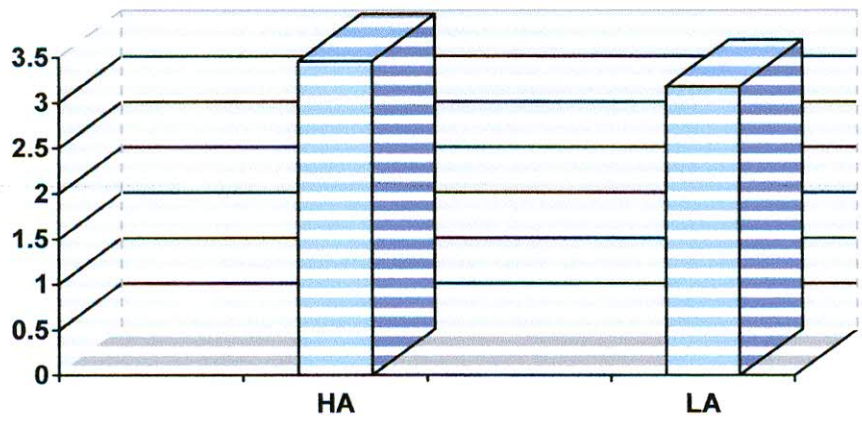


Figure- 1: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG)

HA = Mean of aggression scores of high air pollution affected children
LA= Mean of aggression scores of low air pollution affected children

Table-11: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the high air polluted area.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	212	4.246	1.245	422	19.067	P< 0.001
LAG (APSC scores basis)	212	2.297	0.813			

The t value presented in the above table shows that there is a significant difference in aggression between the children of high affected air pollution group (HAG) and Low affected air pollution group (LAG). It means that the children of high affected with air pollution are more aggressive than the children of low affected with air pollution.

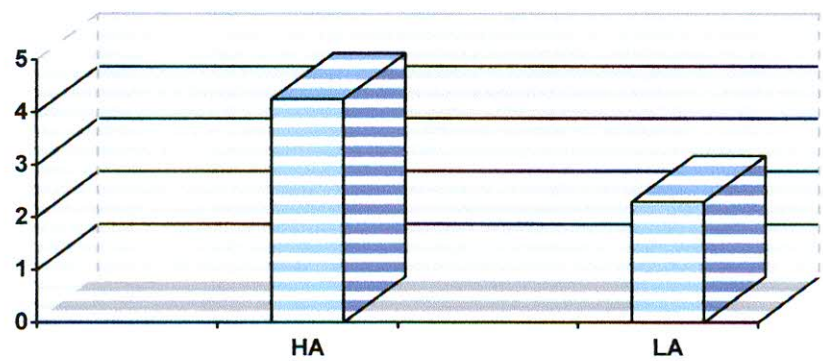


Figure- 2: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the high air polluted area.

HA = Mean of aggression scores of high air pollution affected children
LA= Mean of aggression scores of low air pollution affected children

Table-12: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the low air polluted area.

Category of Ss	Number (N)	Mean	SD	df	t	Levelof Significance
HAG (APSC scores basis)	219	4.155	1.288	436	19.36	P< 0.001
LAG (APSC scores basis)	219	2.01	1.01			

The t value presented in the above table shows that there is a significant difference in aggression between the children of high affected air pollution group (HAG) and Low affected air pollution group (LAG). It means that the children of high affected with air pollution are more aggressive than the children of low affected with air pollution.

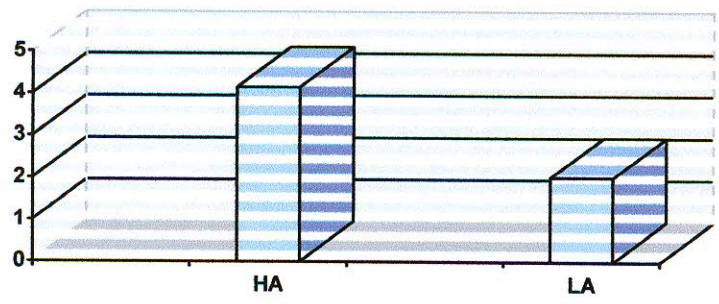


Figure- 3: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the low air polluted area.

HA = Mean of aggression scores of high air pollution affected children
LA= Mean of aggression scores of low air pollution affected children

Table-13: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the whole.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	431	4.19	1.266	860	26.979	P< 0.001
LAG (APSC scores basis)	431	2.147	0.932			

The t value presented in the above table shows that there is a significant difference in aggression between the children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) It means that the children of high affected with air pollution are more aggressive than the children of low affected with air pollution.

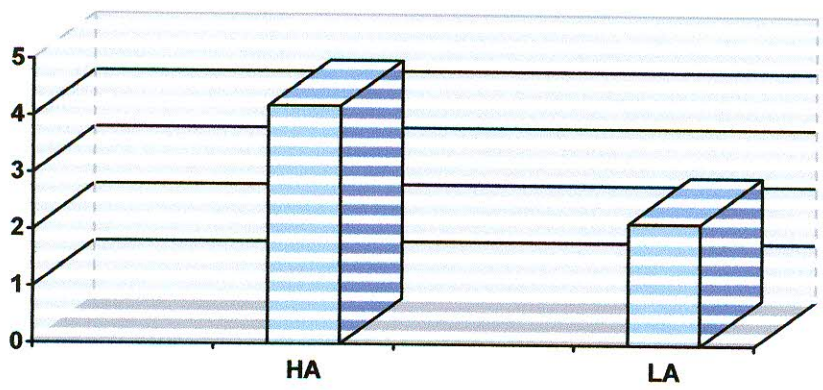


Figure- 4: Comparison on aggression between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the whole.

HA = Mean of aggression scores of high air pollution affected children
LA= Mean of aggression scores of low air pollution affected children

Table-14: Difference in means between the boys and the girls of high air polluted area on aggression.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
Boys	410	4.11	1.27	846	15.805	P< 0.001
Girls	438	2.85	1.03			

The t value presented in the above table shows that there is a significant difference in aggression between the boys and the girls of High air polluted area . It means that the boys are more aggressive than the girls of High air polluted area .

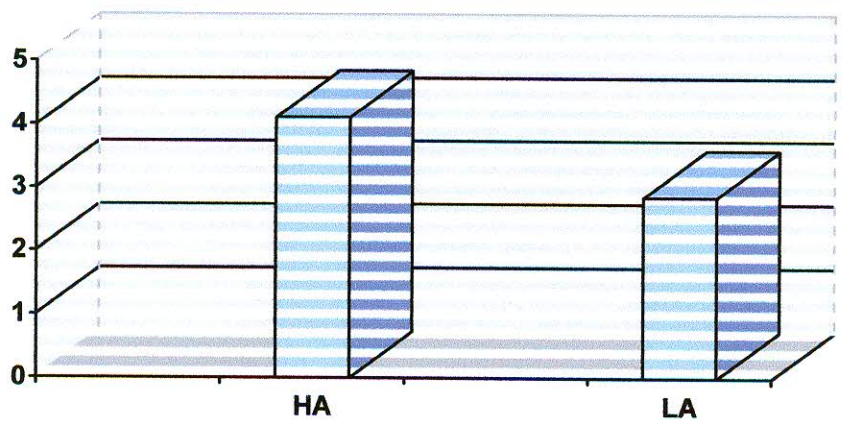


Figure- 5: Difference in means between the boys and the girls of high air polluted area on aggression.

HA = Mean of aggression scores of the boys in high air polluted area
LA= Mean of aggression scores of the girls in high air polluted area

Table-15: Difference in means between the boys and the girls in low air polluted area on aggression.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
Boys	425	3.84	0.99	874	19.409	P< 0.001
Girls	451	2.56	0.96			

The t value presented in the above table shows that there is a significant difference in aggression between the boys and the girls of Low air polluted area . It means that the boys are more aggressive than the girls of Low air polluted area .

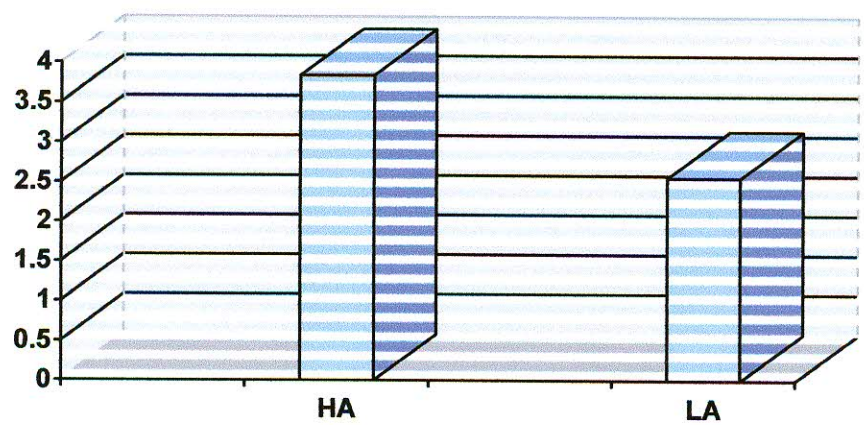


Figure- 6: Difference in means between the boys and the girls in low air polluted area on aggression.

HA = Mean of aggression scores of the boys in low air polluted area
LA= Mean of aggression scores of the girls in low air polluted area

3.2: Anxiety of children of High and Low Air Polluted Area.

Another major objective of the study was find out whether there was any difference in anxiety between the children of high affected with air pollution and the children of low affected with air pollution. For this purpose, means of anxiety scores on the PIC were computed separately for these two groups, and t-test was used to investigate the difference between two means.

Table-16: Comparison on anxiety between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG)

Category of Ss	Number (N)	Mean	SD	df	t	Levelof Significance
HAG (area basis)	848	10.92	2.08	1722	5.456	P< 0.001
LAG (area basis)	876	10.34	2.33			

The t value presented in the above table shows that there is a significant difference in anxiety between the children of high affected air pollution group (HAG) and Low affected air pollution group (LAG). It means that the children of high affected with air pollution are more anxious than the children of low affected with air pollution.

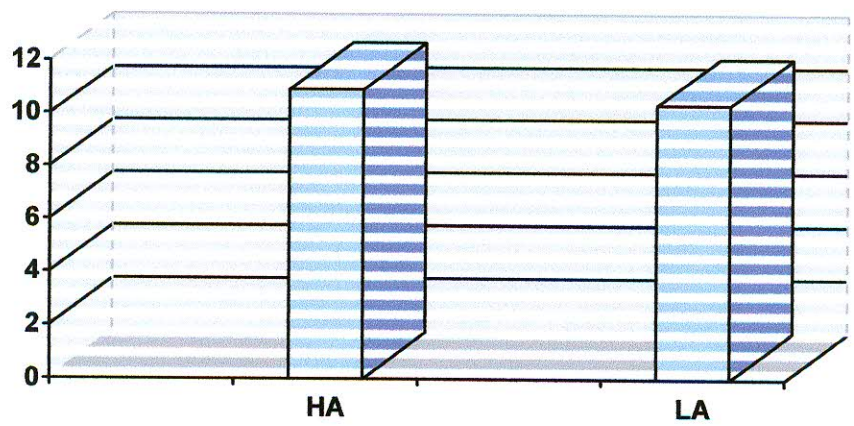


Figure- 7: Comparison on anxiety between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG)

HA = Mean of anxiety scores of high air pollution affected children
LA= Mean of anxiety scores of low air pollution affected children

Table-17: Comparison on anxiety between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the high air polluted area.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	212	12.2	3.672	422	16.945	P< 0.001
LAG (APSC scores basis)	212	10.047	2.893			

The t value presented in the above table shows that there is a significant difference in anxiety between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG). It means that the children of high affected with air pollution are more anxious

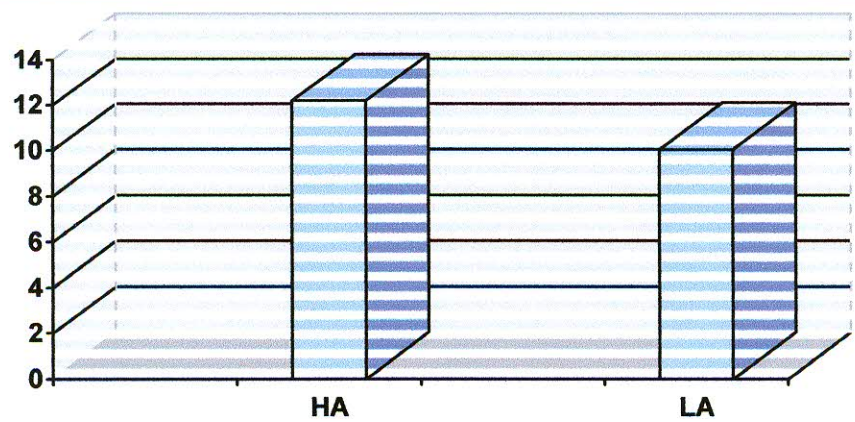


Figure- 8: Comparison on anxiety between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the high air polluted area.

HA = Mean of anxiety scores of high air pollution affected children
LA= Mean of anxiety scores of low air pollution affected children

Table-18: Comparison on anxiety between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the low air polluted area.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	219	11.315	2.755	436	11.589	P< 0.001
LAG (APSC scores basis)	219	8.64	2.018			

The t value presented in the above table shows that there is a significant difference in anxiety between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG). It means that the children of high affected with air pollution are more anxious than the children of low affected with air pollution.

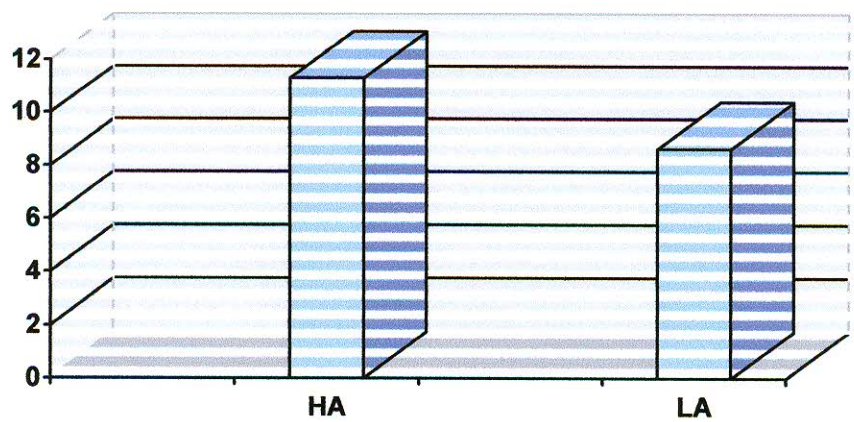


Figure- 9: Comparison on anxiety between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the low air polluted area.

HA = Mean of anxiety scores of high air pollution affected children
LA= Mean of anxiety scores of low air pollution affected children

Table-19: Comparison on anxiety between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the whole.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	431	11.85	3.27	860	12.545	P< 0.001
LAG (APSC scores basis)	431	9.33	2.588			

The t value presented in the above table shows that there is a significant difference in anxiety between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG). It means that the children of high affected with air pollution are more anxious than the children of low affected with air pollution.

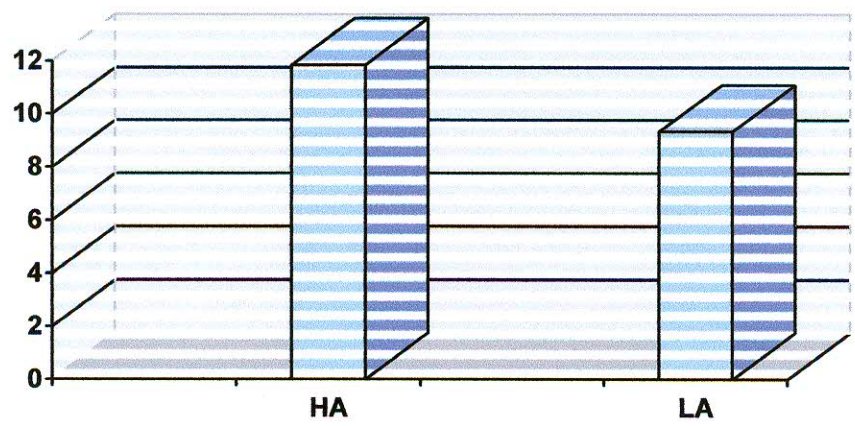


Figure- 10: Comparison on anxiety between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG) in the whole.

HA = Mean of anxiety scores of high air pollution affected children
LA= Mean of anxiety scores of low air pollution affected children

Table-20: Difference in means between the boys and the girls of high air polluted area on anxiety.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
Boys	410	10.63	1.82	846	3.975	P< 0.001
Girls	438	11.19	2.27			

The t value presented in the above table shows that there is a significant difference in anxiety between the boys and the girls of High air polluted area. It means that the girls are more anxious than the boys of High air polluted area.

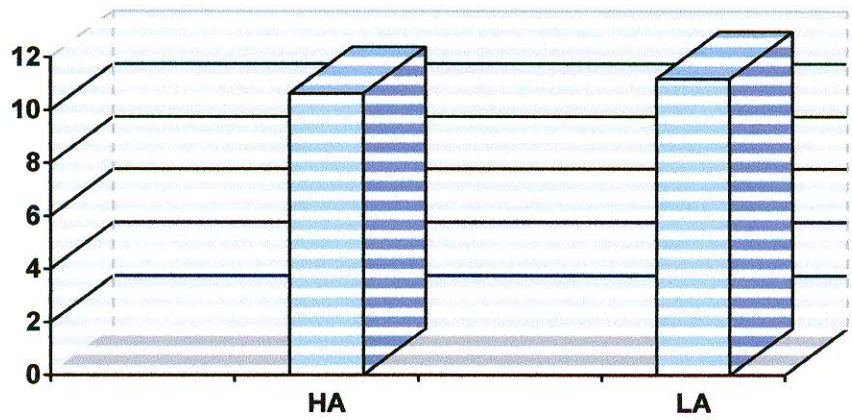


Figure- 11: Difference in means between the boys and the girls of high air polluted area on anxiety.

HA = Mean of anxiety scores of the boys in high air polluted area
LA= Mean of anxiety scores of the girls in high air polluted area

Table-21: Difference in means between the boys and the girls in low air polluted area on anxiety.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
Boys	425	9.33	1.95	874	9.045	P< 0.001
Girls	451	10.65	2.36			

The t value presented in the above table shows that there is a significant difference in anxiety between the boys and the girls of Low air polluted area. It means that the girls are more anxious than the boys of Low air polluted area.

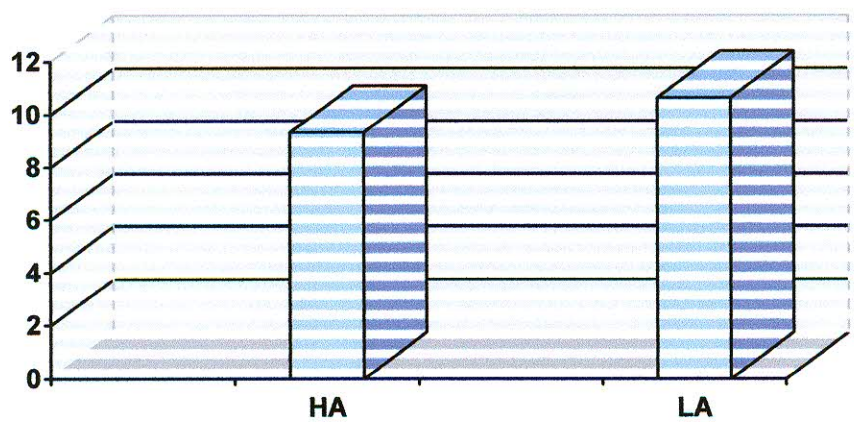


Figure- 12: Difference in means between the boys and the girls in low air polluted area on anxiety.

HA = Mean of anxiety scores of the boys in low air polluted area
LA= Mean of anxiety scores of the girls in low air polluted area

3.3: Academic Achievement of the Children of High and Low Affected with air pollution.

Another important objective of the study was to find out whether there was any difference in academic achievement between the children of high affected air pollution group and low affected air pollution group. For this purpose, the results of the annual examinations for the last two years were taken as the academic achievement for the children. The obtained marks of each year was converted into GPA and the two GPA were summed up and an averaged out for each child. Then mean scores of academic achievement were computed separately for the children of High Affected Group and Low Affected Group. To find out the significance difference between two means of academic achievement, t-test was used.

Table-22: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) .

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (area basis)	848	2.78	0.87	1722	4.39	P< 0.001
LAG (area basis)	876	2.96	0.83			

The t value presented in the above table shows that there is a significant difference in academic achievement between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG) . It means that academic achievement of the children of low affected with air pollution is better than the children of high affected with air pollution (HAG).

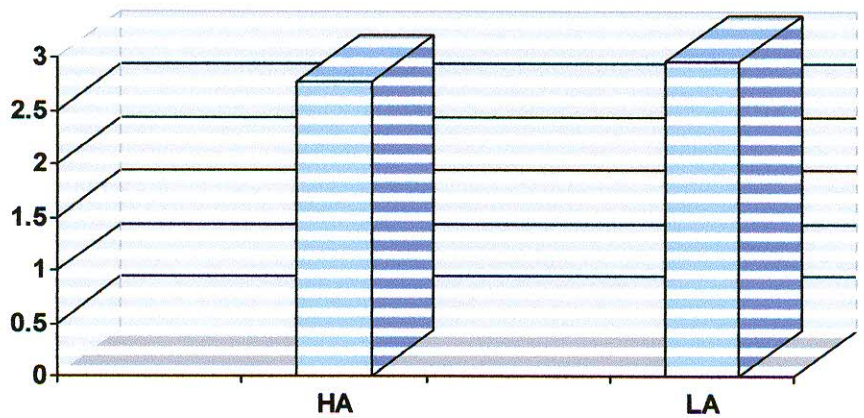


Figure- 13: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG)

HA = Mean of aca. ach. scores of high air pollution affected children
LA= Mean of aca. ach. scores of low air pollution affected children

Table-23: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the high air polluted area.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	212	2.6	0.923	422	17.515	P< 0.001
LAG (APSC scores basis)	212	3.01	0.788			

The t value presented in the above table shows that there is a significant difference in academic achievement between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG). It means that academic achievement of the children of low affected with air pollution is better than the children of high affected with air pollution.

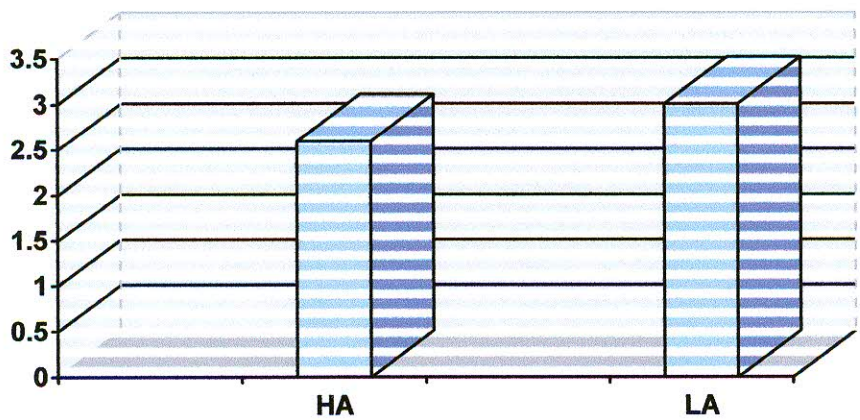


Figure- 14: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the high air polluted area.

HA = Mean of aca. ach. scores of high air pollution affected children
LA= Mean of aca. ach. scores of low air pollution affected children

Table-24: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the low air polluted area.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
HAG (APSC scores basis)	219	2.634	0.845	436	16.945	P< 0.001
LAG (APSC scores basis)	219	3.34	0.736			

The t value presented in the above table shows that there is a significant difference in academic achievement between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG). It means that academic achievement of the children of low affected with air pollution is better than the children of high affected with air pollution.

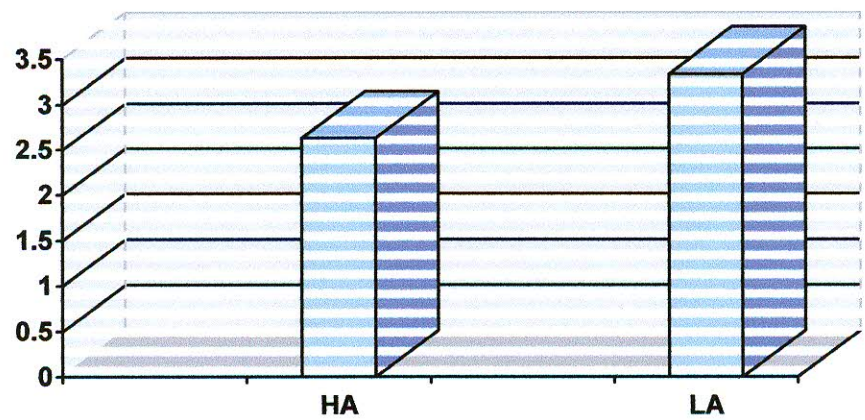


Figure- 15: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the low air polluted area.

HA = Mean of aca. ach. scores of high air pollution affected children
LA= Mean of aca. ach. scores of low air pollution affected children

Table-25: Comparison on academic achievement between children of high affected air pollution group (HAG) and low affected air pollution group (LAG) in the whole.

Category of Ss	Number (N)	Mean	SD	df	t	Levelof Significance
HAG (APSC scores basis)	431	2.615	0.88	860	9.922	P< 0.001
LAG (APSC scores basis)	431	3.177	0.78			

The t value presented in the above table shows that there is a significant difference in academic achievement between the children of high affected air pollution group (HAG) and low affected air pollution group (LAG). It means that academic achievement of the children of low affected air pollution is better than the children of high affected.

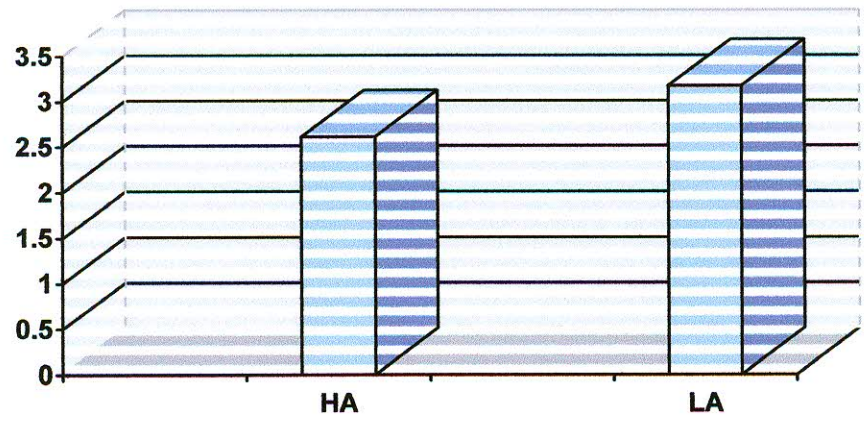


Figure- 16: Comparison on academic achievement between children of high affected air pollution group (HAG) and Low affected air pollution group (LAG)

HA = Mean of aca. ach. scores of high air pollution affected children
LA= Mean of aca. ach. scores of low air pollution affected children

Table-26: Difference in means between the boys and the girls of high air polluted area on academic achievement.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
Boys	410	2.74	0.92	846	1.29	ns*
Girls	438	2.817	0.81			

* not significant

The t value presented in the above table shows that there is no significant difference in academic achievement between the boys and the girls of High air polluted area. It means that there is no significant deference in academic achievement of the boys and the girls of High air polluted area.

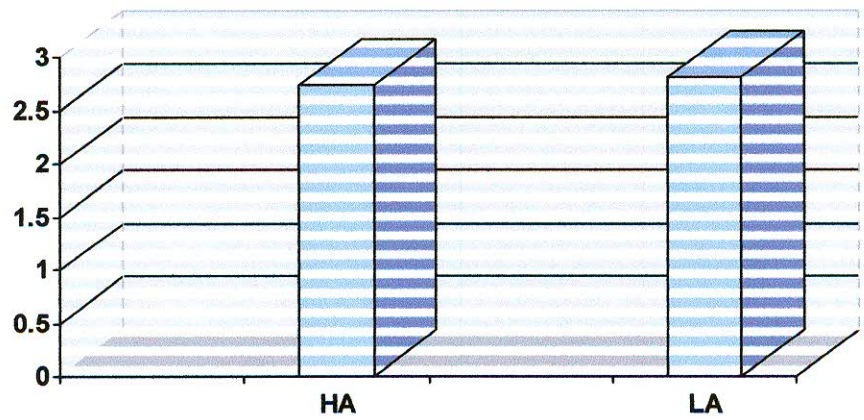


Figure- 17: Difference in means between the boys and the girls of high air polluted area on academic achievement.

HA = Mean of aca. ach. scores of the boys of high air polluted area
LA= Mean of aca. ach. scores of the girls of high air polluted area

Table-27: Difference in means between the boys and the girls in low air polluted area on academic achievement.

Category of Ss	Number (N)	Mean	SD	df	t	Level of Significance
Boys	425	3.01	0.75	874	1.885	ns*
Girls	451	2.91	0.82			

* not significant

The t value presented in the above table shows that there is no significant difference in academic achievement between the boys and the girls of Low air polluted area .It means that there is no significant deference in academic achievement of the boys and the girls of Low air polluted area.

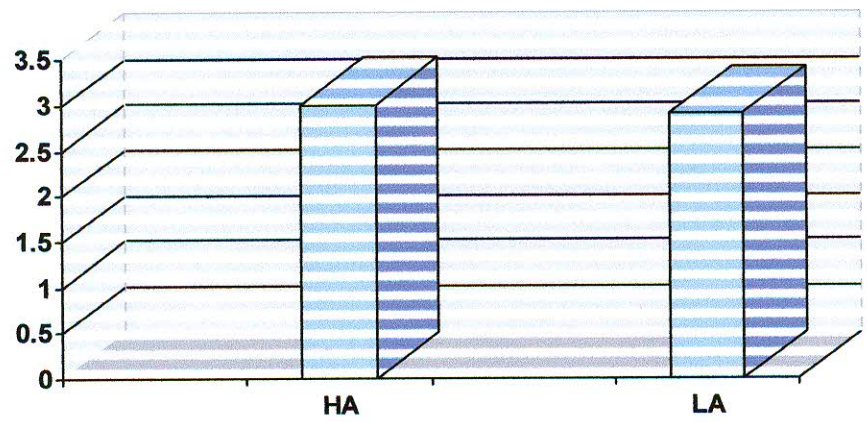


Figure- 18: Difference in means between the boys and the girls in low air polluted area on academic achievement.

HA = Mean of aca. ach. scores of the boys of low air polluted area

LA= Mean of aca. ach. scores of the girls of low air polluted area

3.4: Academic Achievement, Anxiety and Aggression are interrelated.

Presented results of this portion are not pertinent to the formulated hypotheses. Fortunately, the data obtained in this study have made it possible to see the relationship between academic achievement, anxiety and aggression. Co-efficient of correlation were computed separately by using product moment method in all three cases--a) between academic achievement scores and anxiety scores of children; b) between academic achievement scores and aggression scores of children; and c) between aggression scores and anxiety scores of children. The results are shown in the following tables

Table-28: Relationship between academic achievement and anxiety of the children.

N	Variables	Co-efficient of correlation	t	Level of Significance
1724	Academic Achievement & Anxiety	-0.68	31.947	P< 0.001

The above table shows that there is a significance negative correlation between academic achievement and anxiety. It means that there is a negative correlation between academic achievement of children and their anxiety which indicates that high level anxiety may cause the lowering of academic achievement and vise versa.

Table-29: Relationship between academic achievement and aggression in children.

N	Variables	Co-efficient of correlation	t	Level of Significance
1724	Academic Achievement & Aggression	-0.03	1.249	ns*

* not significant

The above table shows that there is no significant relation between academic achievement and aggression. It means that though there is negative relation between academic achievement of children and their aggression but such relationship is not significant.

Table-30 : Relationship between aggression and anxiety in children.

N	Variables	Co-efficient of correlation	t	Level of Significance
1724	Aggression & Anxiety	0.04	1.66	ns*

* not significant

The above table shows that there is no significance relation between aggression and anxiety. It means that though there is positive relation between aggression of children and their anxiety but such relationship is not significant.

CHAPTER- 4

Discussion and Conclusion

DISCUSSION AND CONCLUSION

The main purpose of the study was to investigate whether children's aggression, anxiety and academic achievement were related to their affected level of air pollution. The objectives of the study were- (i) to identify the children who are affected with air pollution, (ii) to find out the relationship of air pollution with aggression and anxiety of school children, and (iii) to determine whether children's academic achievement was related to their affected level with air pollution. By considering the objectives, the following hypotheses were framed - i) Children who are highly affected with air pollution are likely to be more aggressive than the less affected. ii) Children who are highly affected with air pollution are likely to be more anxious than those who are less affected with air pollution . iii) Children affected less with air pollution will show better academic achievement than the high affected ones. To verify these hypotheses, data had been collected by administering the APSC on the children, and the PIC on the parents (father or mother) of the children, respectively. These data were analyzed through computer programme to obtain the results.

4.1 Findings of the Study:

The findings of the present study have been discussed under the following sub-headings.

4.1.1 Aggression of the children of high and low affected with air pollution:

To verify the first hypothesis which states that the children high affected with air pollution are more aggressive than those of the less affected. It is seen in Table-10 that mean scores of aggression of the children of high and low air polluted area are 3.46 and 3.18 respectively. By using the t-test it was observed that there was a significant difference in aggression between the children of high and low affected with air pollution (t= 4.68, df=1722, P<.001).

Table-11 shows that in the children of high air polluted areas, the mean scores of aggression of high and low affected air pollution were 4.246 and 2.297 respectively. It shows significant difference in aggression between the high and low affected children (t= 19.067 df=422, P<.001) which suggests that children from high air polluted area were more aggressive than those from low affected air pollution.

Table-12 shows that in the children of low air polluted areas, the mean score of aggression of high and low affected with air pollution were found 4.155 and 2.01 respectively. The use of t-test, it shows the significance difference in aggression between the children of high and low affected with air pollution (t= 19.36 , df=436, P<.001).

Table-13 shows that the mean scores of aggression of high and low affected with air pollution were found 4.19 and 2.147 respectively. By using the t-test it shows significant difference in the children of high and low affected with air pollution (t= 26.979, df =860, p<.001)

In table Nos. 10, 11, 12 and 13 indicate that the children affected high with air pollution are more aggressive as compared to the children of low affected ones. Thus the results supported the first hypothesis.

Although no evidence has been found directly, the children with high affected air pollution would be more aggressive. It was reviewed that particular air pollutants influenced the aggressive behavior. Myers (1990) found that deficiency of glucose in blood might influence aggression. The probable cause of deficiency of glucose in blood is the presence of Co inhaling air. Hileman (1987) showed the presence of excessive amount of lead in inhaling air results in aggression, paralysis and development of intelligence. Griffith (1970) has shown environmental variation have effects on aggression. It is noted that environmental variation was considered as temperature. Same type of study was conducted by Rule et. al (1987) and it was found that excessive temperature produced aggressive thought and aggressive behavior. The above hypothesis may also get theoretical support. Viewed from biological perspectives of aggression, it can be said that some neural centers give rise to aggressive behavior when stimulated the brain mechanism. The children who always stay in unpleasant events such as varieties of air pollutants may be stimulated, and may lead to exhibit aggressive behaviour.

According to frustration–aggression hypothesis, frustration and painful experience may arouse aggression. Children in air polluted area are facing continuously a large number of air pollutants. As a result they are frustrated and display aggressive acts.

Social psychologists have cited different situations which produce aggression. These situations are pain, heat, attack, crowding, arousal, television etc (Begum, 1993). Pain, heat, and crowding are the common factors in air polluted areas. These factors always lead to exhibit aggressive acts in the children. Following these supported phenomena the first hypothesis is said to be confirmed.

Besides, Table-14 shows that the mean scores of aggression of the boys and the girls with high affected with air pollution were found 4.11 and 2.85 respectively. By using the t – test it was found that there was a significant difference in aggression between the boys and the girls ($t = 15.805$, $df = 846$ $p < .001$)

Table–15 shows that the mean scores of aggression of the boys and the girls who are less affected with air pollution, were found 3.84 and 2.56 respectively. By using the t–test it was found that there was a significance difference in aggression between the boys and girls ($t = 19.409$, $df = 874$, $p < .001$)

The results in table-14 and table-15 indicate the effectiveness of sex difference on aggression. These results are in agreement with findings of previous studies of Richardson, Bernstein & Tailor,1979 ; Buss, 1963 ; Harvey & Enjle,1978;Biswas, 1989; Moore and

Mukal,1982; Eagly and Steffen,1986; Huesmann et al,2003; Hoffman,1977; Maccoby and Jacklin,1979; Lal et al,1976; Begum et al, 1981; Begum, 1996.

4.1.2 Anxiety of the children between high and low affected with air pollution.

It was hypothesized that children who are high affected with air pollution are more anxious than those are low affected. To verify this hypothesis, the mean scores of anxiety between the children of high and low affected with air pollution were compared.

Table–16 shows that the mean scores of anxiety of the children of high affected with air pollution was 10.92 and that of the low affected with air pollution was 10.34. By using t–test it was found that there was a significance difference in anxiety between the children of high and low affected with air pollution ($t = 5.546$, $df = 1722$, $P<.001$)

Table-17 shows, in the children of high air polluted area, mean scores of anxiety of high and low affected with air pollution, were found 12.2 and 10.047 respectively. By using the t–test it shows significant difference in anxiety between the children of high and low affected with air pollution ($t = 16.945$, $df = 422$ $p<.001$)

Table-18 shows, in the children of low air polluted area, mean scores of anxiety of high and less affected with air pollution, were to be found 11.315 and 8.64 respectively. By using the t–test it shows significant difference in anxiety between the children of high and less affected with air pollution ($t = 11.589$, $df = 436$ $p<.001$)

Table-19 shows that the mean scores of anxiety of high and low affected children from combined high and low air polluted areas were found 11.85 and 9.33 respectively. By using t–test, it shows significance difference in children of high and low affected with air pollution ($t = 12.545$, $df = 860$ $p < .001$)

The results of tables 16, 17, 18 and 19 indicate that children high affected with air pollution are more anxious than the children of low affected with air pollution. Thus the hypothesis that children who are highly affected with air pollution are likely to be more anxious than those of the low affected has been confirmed.

Although no empirical evidence was available to support that the children high affected with air pollution would be more anxious than others, it underlaid the possible reason that might be attributed to the fact. To support it, the origin in biological theory of anxiety and the generalized view of anxiety may be mentioned. According to biological theory, low levels neurotransmitter substances are linked with abnormal levels of anxiety. Some of the particular air pollutants have effects on autonomic nervous systems; as a result, neurotransmitter may be changed.

In generalized view, anxiety is maintained by the dysfunctional appraisal of a situation. Children in high air polluted area are continuously stimulated by the unpleasant appraisal, and may be anxious. Thus the second hypothesis may get theoretical support.

Besides, Table-20 shows that the mean scores of anxiety of the boys and the girls affected with high air pollution were found 10.63 and 11.19 respectively. By using the t–test it shows was significant difference in anxiety between the boys and the girls affected with high air pollution. ($t = 3.975$, $df = 846$, $p < .001$)

Table–21 shows that the mean score of anxiety of the boys and the girls who are affected with low air pollution, were found 9.33 and 10.65 respectively. By using t–test it shows significance difference in anxiety between the boys and girls. ($t = 9.045$, $df = 874$, $p < .001$)

The results in table 20 and 21 indicate effectiveness of sex difference on anxiety. These results are in agreement with the findings of Bose & Basu,1977; Sharma, 1985; Afrose, 1985.

4.1.3 Academic Achievement of children affected with high and low air pollution.

The third hypothesis of the study was that the children who are affected low with air pollution would show better academic achievement than the high affected ones. To verify the hypothesis, the results of the annual examinations of the children for the last two years were taken as academic achievement. Obtained two G.P.A. were averaged out for each child and it was considered as academic achievement.

In table-22 showing that mean scores of academic achievement of the children of high and low affected with air pollution were found

2.78 and 2.96 respectively. By using the t–test it was found that there was a significance difference is academic achievement between the children of high and low affected with air pollution ($t = 4.39$, $df = 1722$, $p<.001$). Children low affected air pollution had better academic achievement than those who were affected high with air pollution.

Table-23 shows that the mean scores of academic achievement of high and low affected children in high air polluted areas were found 2.6 and 3.01 respectively, and the t–test was used. It was found that there was a significant difference in academic achievement between the high and the low air pollution affected children ($t = 17.515$, $df = 422$, $p<.001$)

Table-24 shows that the children of low air polluted areas the mean scores of academic achievement of high and low affected were found 2.634 and 3.34 respectively. Using the t–test it was found a significant difference in academic achievement between the children of high and low affected with air pollution ($t = 16.945$, $df = 436$, $p<.001$)

Table-25 shows that the mean score of academic achievement of high and low affected children from combined high and low air polluted areas were found 2.615 and 3.177 respectively. By using the t–test there was found a significance difference in academic achievement of the children of high and low affected with air pollution ($t = 9.922$, $df = 860$, $p<.001$)

The results of table nos. 22, 23, 24, and 25 indicate that the children affected low with air pollution showed better academic achievement than the high affected ones. These findings of the study

provide support to the third hypothesis. Although no evidence were available that the children of low affected with air pollution would show better academic achievement as compared to the high affected ones, it is undoubtful that comfortable situation helps acquire better academic achievement. It is most necessary, comfortable situation as well as favourable social condition and physiological fitness are helpful to be properly attentive to their academic curriculum. Some of the air pollutants always make imbalance psycho – social fitness of children who have been staying for a long period in high air polluted areas. Besides, several studies (Hileman, 1987; Roy,1992; Das, 1997) suggest that the presence of lead in inhaling air effects on the development of intelligence. It is noted that intelligence is the most useful factor to obtain better academic achievement (McCandless & Castaneda, 1956; Bose& Basu,1977; Alper & Haper,1960; Hapner & Kaplan, 1959; Feldusen & Khausmeier, 1962). From the above findings, it may be possible to assume that high air pollution affected children can not show better academic achievement.

Table-26 and table 27 show that there is no difference in academic achievement of the boys and the girls.

4.1.4 Inter relationship between aggression, anxiety and academic achievement.

Although results of this portion were not pertinent to the formulated hypotheses, it was found out to see possibly relationship between;

i) academic achievement of children and their anxiety as a whole (N=1724), ii) academic achievement of children and their aggression (N=1724), iii) aggression and anxiety of children (N=1724).

Fortunately, the obtained data in this study has made to see possibly the inter relationship between academic achievement, anxiety and aggression and these issues invite future research.

Table-28 shows that the co-efficient of correlation between academic achievement and anxiety was–0.68 and it was significant. It indicates that there was a negative correlation between academic achievement of children and their anxiety ($r = -0.68$ N=1724, df=1722, $P<.001$) that means high anxiety causes low academic achievement and vice versa. The results in table-27 are supported by the findings of past studies (McCandless & Castaneda, 1956; Alper & Haper; 1960; Bose & Basu, 1977; Afsaruddin & Azad, 1992).

Table-29 shows that the co-efficient of correlation between academic achievement and aggression of children was found –0.03 and it was not significant. It means that there exists no significant relationship between children's anxiety and their aggression.

Table-30 shows that co-efficient of correlation between anxiety and aggression of children was 0.04 and it was not significant. This results indicate that children's anxiety is not related to their aggression. From above discussion the following general conclusion have been drawn – 1) Children who high affected with air pollution are more aggressive than less affected ones.

2) Children who high affected with air pollution are more anxious than the less affected.

3) Academic achievement of the children who are less affected with air pollution is better than the high affected ones.

However, the discussion about the present study would not be complete unless some of the major problems and shortcoming of the study are mentioned.

4.2 Problems and shortcomings of the study:

There can be research without any problems and limitations. It should be noted, however, that in the present study the researcher had to face some obvious problems. The major problem was the selection of samples. Dhaka is a Metropolitan city often over crowded with population covering a large area. Therefore the selection of the required samples was a difficult task. More difficult it was to collect data from the sampled respondents who were not available in times of need. Therefore the researcher has to spend much time, energy and money to get data ready from respondents (parents) with repeated visits.

Another difficulty was the unavailability of the necessary academic result of some of the children.. As a results data for a good number of children had be excluded.

Due to paucity of time it was not possible to develop a norm for the APSC which otherwise could make a more objective analysis of data.

4.3 Indications for Future Research:

The present study, carried out on children to know the effects of air pollution on their aggression, anxiety and academic achievement, is a timely effort. In the present day, Dhaka is a crowded with population, vehicles, buildings, industries, roads & highways etc which are producing varieties of air pollutants. For a developing country like Bangladesh, it is expected that more industry and more transport we need in future, but no air pollution is quite unexpected.. So the findings of this study will be helpful for future research in this field. It will also help educationists and policy makers to take environment related programme with much care. However, more studies should be conducted in this field to find out the health hazards of other people living in Dhaka and other air polluted areas especially in the industry based regions of the country.

4.4 Recommendations

The following actions are recommended to the present study-

- Strict enforcement of existing environmental and traffic laws, policies and guide lines.
- Introduction of environmental awareness programmes for educational institutions, vehicle users, and community people.
- Partial relocation of industrial, educational, commercial private and government office to sub urban areas to avoid transport congestion and emissions from vehicles.
- Encouraging the school going children to use mask.

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Appendices

The Air Pollution Scale for Children (APSC)

নীচে কতিপয় উক্তি দেওয়া হয়েছে যা সবার বেলায় কম-বেশি প্রযোজ্য। উক্তি গুলো তোমার বেলায় কতটুকু প্রযোজ্য তা নির্দেশ করার জন্য প্রতিটি উক্তির পাশে পাঁচ বিন্দু বিশিষ্ট একটি স্কেল দেওয়া আছে। স্কেল বিন্দু গুলো নিম্নবর্ণিত মাত্রা নির্দেশ করে। মাত্রাগুলো হলো: 1=খুব কম, 2=কম, 3=মাঝামাঝি, 4=বেশি এবং 5=খুব বেশী। উক্তিটি তোমার বেলায় যে মাত্রায় প্রযোজ্য বলে তুমি মনে কর সে মাত্রার নীচের বৃত্তাকার (০) ঘরটিতে টিক (√) চিহ্ন দাও।

	খুবকম	কম	মাঝামাঝি	বেশি	খুববেশি
১। আমার টনসিলের সমস্যা আছে।	1	2	3	4	5
২। আমার প্রায়ই সর্দি কাঁশি হয়।	1	2	3	4	5
৩। নাক দিয়ে নিঃশ্বাস নিতে প্রায়ই আমার কষ্ট হয়।	1	2	3	4	5
৪। মাঝে মাঝে আমার বুকে ব্যথা করে।	1	2	3	4	5
৫। আমি সহজেই নার্ভাস হয়ে যাই।	1	2	3	4	5
৬। প্রায়ই আমার চোখ ব্যথা করে।	1	2	3	4	5
৭। মাঝে মাঝে আমার মাংসপেশীতে কম্পন হয়।	1	2	3	4	5
৮। প্রায়ই আমার মনমরা ভাব হয়।	1	2	3	4	5
৯। প্রায়ই আমার মাথা ঘোরে।	1	2	3	4	5
১০। আমার প্রায়ই হাঁচি আসে।	1	2	3	4	5
১১। প্রায়ই আমার বুক ধড়ফড় করে।	1	2	3	4	5
১২। সমবয়সীরা আমার তুলনায় বুদ্ধিমান ।	1	2	3	4	5
১৩। পড়াশুনা করতে আমার কষ্ট হয়।	1	2	3	4	5
১৪। সমবয়সীরা আমার তুলনায় স্বাস্থ্যবান।	1	2	3	4	5
১৫। বেশির ভাগ সময়ই খাবারের প্রতি আমার অরুচি থাকে	1	2	3	4	5
১৬। ক্লাসের অন্য ছেলে-মেয়েরা আমার তুলনায় পড়া ভাল মুখস্ত বলতে পারে।	1	2	3	4	5
১৭। অকারণে আমার মেজাজ খারাপ হয়।	1	2	3	4	5
১৮। অধিকাংশ সময়ে আমার গলা খুস খুস করে।	1	2	3	4	5
১৯। অনেক সময় কাঁশির কারণে আমার ঘুম ভেঙ্গে যায়।	1	2	3	4	5
২০। আমার মাথা ঝিন ঝিন করে।	1	2	3	4	5
২১। আমার ফুসফুসে সমস্যা আছে।	1	2	3	4	5
২২। আমার মুখ মন্ডলকে ফ্যাকাসে মনে হয়।	1	2	3	4	5
২৩। সম বয়সীরা আমার তুলনায় বেশী হাসি-খুশি	1	2	3	4	5
২৪। প্রায়ই আমার মাথা ধরে।	1	2	3	4	5
২৫। আমি সহজেই সর্দি কাশিতে আক্রান্ত হই।	1	2	3	4	5
২৬। অধিকাংশ কাজে অনাগ্রহী।	1	2	3	4	5
২৭। প্রায়ই আমার মাথা ব্যথা করে।	1	2	3	4	5
২৮। মাঝে মাঝে আমার হাত/পা এর গিঁটে ব্যথা করে।	1	2	3	4	5

২৯। সমবয়সীদের তুলনায় আমার শরীর দূর্বল।	(1)	(2)	(3)	(4)	(5)
৩০। প্রায় সময়ই আমি ক্লান্তি বোধ করি।	(1)	(2)	(3)	(4)	(5)
৩১। অন্য ছেলে-মেয়েরা আমার তুলনায় বেশী ছুটাছুটি করতে পারে।	(1)	(2)	(3)	(4)	(5)
৩২। অন্য ছেলে-মেয়েরা আমার তুলনায় বেশী ছুটাছুটি করতে পারে।	(1)	(2)	(3)	(4)	(5)
৩৩। কোন জিনিস নষ্ট হওয়া দেখতে মাঝে মাঝে আমার ভালো লাগে।	(1)	(2)	(3)	(4)	(5)
৩৪। অন্য ছেলেমেয়েরা ক্লাসের পড়া আমার চেয়ে দ্রুত বুঝতে পারে।	(1)	(2)	(3)	(4)	(5)
৩৫। আমার শ্বাস কষ্ট হয়।	(1)	(2)	(3)	(4)	(5)
৩৬। সম বয়সীরা আমার তুলনায় বেশী পরিশ্রম করতে পারে।	(1)	(2)	(3)	(4)	(5)
৩৭। আমার গলা ব্যথা করে।	(1)	(2)	(3)	(4)	(5)
৩৮। সর্বদা আমার চোখে ঘুম ঘুম ভাব থাকে।	(1)	(2)	(3)	(4)	(5)
৩৯। আমার জন্য আব্বা আম্মাকে প্রায়ই ডাক্তারের নিকট যেতে হয়।	(1)	(2)	(3)	(4)	(5)
৪০। মাঝে মাঝে আমার বুকের উপরিভাগে বামবাহুর দিকে ব্যথা করে।	(1)	(2)	(3)	(4)	(5)
৪১। আমার মুখস্তের ক্ষমতার অভাব আছে।	(1)	(2)	(3)	(4)	(5)
৪২। প্রায়ই আমার শরীর চুলকায়।	(1)	(2)	(3)	(4)	(5)

স্কোর .....

নাম..... স্কুলের নাম .....

পিতারনাম.....মাতার নাম .....

শ্রেণী ..... শাখা .....রোলনং ..... বয়স .....

বর্তমানঠিকানা .....

টেলিফোন নং (যদি থাকে) .....

বিগত দুই বছরের ফলাফল ঃ.....

নির্দেশাবলী

অনুগ্রহ পূর্বক প্রথমে ফাঁকা জায়গা প্রয়োজনীয় তথ্য দ্বারা পূরণ করবেন। অতঃপর নীচে বর্ণিত প্রতিটি উক্তি মনোযোগ সহকারে পড়বেন। যদি উক্তিটি আপনার সন্তানের বেলায় সত্য বলে মনে হয়, তা'হলে উক্তিটির ক্রমিক নম্বর অনুযায়ী উত্তর পত্রের ক্রমিক নম্বরের পাশের "T" চিহ্নিত ঘরে টিক (√) চিহ্ন দিবেন। কিন্তু উক্তিটি যদি আপনার সন্তানের বেলায় সত্য বলে না মনে হয়, তা'হলে উক্তিটির পাশের "F" চিহ্নিত ঘরে টিক (√) চিহ্ন দিবেন। এভাবে সবগুলো উক্তি মূল্যায়ন করবেন। মূল্যায়নের জন্য কোন নির্দিষ্ট সময়-সীমা নেই, তবে যথাসম্ভব দ্রুত শেষ করার চেষ্টা করবেন। আপনার এ মূল্যায়ন গবেষণা কাজে ব্যবহার করা হবে এবং আপনার মূল্যায়নের গোপনীয়তা রক্ষা করা হবে। গবেষণা কাজে সহযোগিতা করার জন্য আপনাকে ধন্যবাদ

সন্তানের নাম ঃ .....
সন্তানের বয়স ঃ ..... শ্রেণী ঃ ..... রোল নং .....
সন্তানের স্কুলের নাম ঃ .....
মূল্যায়রকারীর নাম (পিতা অথবা মাতা) ঃ .....
আবাসিক এলাকার নাম ঃ .....

উক্তিসমূহ

১। আমার সন্তান সর্বদা এক দল ছেলে মেয়ে সাথে খেলে।
২। আমার সন্তান সর্বদা কষ্টের সাথে হাসে।
৩। অন্য ছেলে মেয়েরা আমার সন্তানকে প্রায়ই পাগল ভাবে।
৪। সাধারণতঃ বড়রা যে বিষয়ে দুশ্চিন্তগ্রস্ত হয় আমার সন্তানও সে বিষয়ে দুশ্চিতা করে।
৫। আমার সন্তানের বন্ধু বান্ধবের সংখ্যা অনেক।
৬। আমার সন্তানের বুদ্ধি সাধারন মানের।
৭। আমার সন্তানের আচরণ মাঝে মাঝে আমাদের বিব্রত করে।
৮। আমার সন্তান যথেষ্ট বুদ্ধি বিবেচনা সহকারে রসিকতা করে।
৯। মাঝে মাঝে আমার সন্তান অলীক বস্তুও প্রত্যক্ষন করে।
১০। পাপ কাজ আমার সন্তানকে উদ্বিগ্ন করে।
১১। আমার সন্তানের নিকট থেকে অন্যরা বেশি কিছু শুনতে বা জানতে চায় না।
১২। মাঝে মাঝে আমার সন্তান বাড়ীর বাইরেও পোশাক বিহীন অবস্থায় থাকে।
১৩। আমার সন্তানের আত্মা বিশ্বাস কম।
১৪। আমি সর্বদা আশা করি যে, আমার সন্তান বন্ধু বৎসল হবে।
১৫। আমার সন্তান নিজেই তার চুল আঁচড়াতে পারে।

১৬। আমার সন্তান সচরাচর অন্য দ্বারা প্রত্যাখ্যাত হয়।

১৭। কোন জিনিস নষ্ট করে আমার সন্তান আনন্দ পায় বলে মনে হয়।

১৮। আমার সন্তান মাঝে মাঝে তার বন্ধুদের নিকট চিঠি লেখে।

১৯। বজ্রপাত এবং বিদ্যুৎ চমকালে আমার সন্তান বিরক্তি প্রকাশ করে।

২০। স্কুল কতৃপক্ষের মতে অন্য ছেলেমেয়েদের সাথে আমার সন্তানের মেশার জন্য সাহায্যের প্রয়োজন।

২১। আমার সন্তান প্রায়ই জানতে চায় আমরা তাকে ভালবাসি কিনা।

২২। অন্য আমার সন্তানকে তাদের নেতা মনে করে।

২৩। পাঁচ বছর বয়সে আমার সন্তান বেবী সাইকেল চালাতে পারতো।

২৪। মাঝে মাঝে আমার সন্তান রেগে যায়।

২৫। আমার সন্তান শীতল দিনেও ঘন ঘন গরম অনুভূত হওয়ার কথা বলে।

২৬। আমার সন্তানের ব্যবহার বেশীল ভাগ সময়ই অন্যদের ক্ষিপ্ত করে তোলে।

২৭। ইদানিং আমার সন্তানের চোখে সমস্যা পরিক্ষিত হচ্ছে।

২৮। অন্যরা আমার সন্তানকে মেধাবী মনে করে।

২৯। আমার সন্তানের ঘন ঘন চুকা (টক) ঢেকুর উঠে।

৩০। আমার সন্তান দক্ষতার সাথে মিথ্যে বলে ঝামেলা এড়িয়ে চলে।

৩১। আমার সন্তান মাঝে মাঝে অন্য ছেলেমেয়েদের ঠকাতে পছন্দ করে।

৩২। আমার সন্তান খেলাধূলা বা কোন বিষয় পরিচালনায় পারদর্শী।

৩৩। এক সময় আমার সন্তানের কথা বলতে সমস্যা হত।

৩৪। অন্যদের সাথে দুষ্টুমি করা আমার সন্তানের একটি বড় সমস্যা।

৩৫। আমার সন্তান তার সমবয়সীদের ন্যায় কাঁচি দিয়ে কাপড় বা কাগজ কাটতে পারে।

৩৬। কোন বিষয়ে অন্যদের মতো আমার সন্তান যত্নবান নয়।

৩৭। আমার সন্তান হাতের সাহায্যে কিছু করতে অসুবিধা বোধ করে।

৩৮। অন্যদের ধারণা আমার সন্তানের মন ছোট।

৩৯। আমার সন্তান প্রতিবেশীদের সম্পর্কে জানতে আগ্রহী।

৪০। আমার সন্তান কখনও অন্যদের নিকট থেকে বেশী সুবিধা নেয় না।

৪১। আমার সন্তান কোন দুর্ঘটনা ব্যতীত বাড়ীর বাইরে কাটাইনি।

৪২। আমার সন্তান এক বস্তু থেকে অন্য বস্তুতে লাফ দিতে পছন্দ করে।

৪৩। আমার সন্তান অন্যদের আক্রমন করে বিপদে পড়েছে।

৪৪। কোন বিষয় নিয়ে আমার সন্তান খুব বেশী দুশ্চিতা করে।

৪৫। সমবয়সী যে কারো থেকে আমার সন্তানের বন্ধু বান্ধবের সংখ্যা বেশী।

৪৬। আমার সন্তানের যখন পাগলামি বাড়ে তখন চোখে চোখে রাখতে হয়।

৪৭। সত্যিকার অর্থে আমার সন্তানের কোন প্রকৃত বন্ধু নেই।

৪৮। আমার সন্তান সব সময়ই সুখী।

৪৯। প্রায়ই আমার সন্তান অভিযোগ করে যে, অন্যরা তাকে বুঝতে চায় না।

৫০। আমার সন্তানের বন্ধু বান্ধবের সংখ্যা খুবই কম।

৫১। আমার সন্তান শারীরিক পরিশ্রমের খেলা ধুলা পছন্দ করে।

৫২। আমার সন্তানের অন্যদের অনুভুতিগুলো ঠিকমতো বুঝতে না পারার অক্ষমতা দেখে আমি মাঝে মাঝে উদ্বিগ্ন হই।

৫৩। সামান্য কিছুতে আমার সন্তান প্রায়ই ভয় পায়।

৫৪। কোন অপরাধ করে শাস্তি এড়াতে আমার সন্তান অন্যের উপর দোষ চাপানোর চেষ্টা করে।

৫৫। আমার সন্তান কখনও অযথা তর্ক করে না।

৫৬। আমার সন্তান প্রায়ই আমার কথা অমান্য করে।

৫৭। আমার সন্তান নিজেকে জাহির করতে পছন্দ করে।

৫৯। কোন অভিযোগ ছাড়াই আমার সন্তান নির্দিষ্ট সময়ে ঘুমুতে যায়।

৬০। আমার সন্তান আশে পাশের সকলের ওপর কর্তৃত্ব করতে চায়।

৬১। পড়াশুনা করতে আমার সন্তানের অসুবিধা হয়।

৬২। আমার সন্তানের আচরণ পরিবর্তনে গালমন্দই যথেষ্ট।

৬৩। আমার সন্তান মাঝে মাঝে তার পিতামাতাকে অমান্য করে।

৬৪। আমার সন্তানের জন্য স্কুলে বিশেষ ক্লাস নেওয়ার প্রয়োজন।

৬৫। আমার সন্তান সচরাচর একাকী খেলে।

৬৬। মাঝে মাঝে আমার সন্তান খুব বেশী মিষ্টি খায়।

৬৭। আমার সন্তান প্রায়ই তার বন্ধু বান্ধবদের বাড়িতে নিয়ে আসে।

৬৮। ছয় বছর বয়সে আমার সন্তান গননা করতে শিখে ছিল।

৬৯। ছয় বছর বয়সে আমার সন্তান তার নাম লিখতে পারতো।

৭০। আমার সন্তান ভুল করা থেকে কিছু শেখেনা।

৭১। কোন কিছু পাওয়ার জন্য অন্যরা যে রূপ অপেক্ষা করে আমার সন্তান সেরূপ অপেক্ষা করতে পারে না।

৭২। শিক্ষকের দেওয়া বাড়ির কাজগুলো আমার সন্তান নিয়মিত করে থাকে।

৭৩। আমার সন্তান সচরাচর দলের নেতৃত্বে থাকে।

৭৪। শাস্তি থেকে রেহাই পেতে অথবা বিব্রতকর পরিস্থিতি এড়াতে আমার সন্তান মিথ্যে বলে।

৭৫। আমার সন্তানের বিভিন্ন ধারণা সম্পর্কে অন্য ছেলে মেয়েরা হাসি ঠাট্টা করে।

৭৬। মাঝে মাঝেই আমার সন্তানের মাংস পেশী কেঁপে ওঠে।

৭৭। অন্যদের সাথে কথা বলার সময় আমার সন্তান অস্বস্তিবোধ করে।

৭৮। অন্যদের সাথে কথা বলার সময় আমর সন্তান অস্বস্তি বোধ করে।

৭৯। ক্লাশ শিক্ষকের অভিযোগ, আমার সন্তান ক্লাসে স্থির ভাবে বসে থাকে না।

৮০। আমার সন্তানের কিছু বদ অভ্যাস আছে।

৮১। কথা বলার সময় আমার সন্তান ঘন ঘন ঢোক গেলে।

৮২। আমার সন্তান ঘনঘন বোবায় ধরার দুঃস্বপ্ন দেখে।

৮৩। আমার সন্তান কখনও স্বার্থপরের মত কাজ করে না।

৮৪। প্রতিটি কাজ নির্দিষ্ট সময়ে করা উচিত বলে আমার সন্তান মনে করে।

৮৫। রক্ত দেখলে আমার সন্তান ভয় পায়।

৮৬। সমবয়সী অন্য ছেলে-মেয়েদের তুলনায় আমার সন্তান অপরিচ্ছন্ন থাকে।

৮৭। আমার সন্তান যে কোন কাজ করার সাহজ রাখে।

৮৮। অন্যের ভাল দেখলে আমার সন্তান মাঝে মাঝে ঈর্ষান্বিত হয়।

৮৯। লাজুকতা আমার সন্তানের সবচেয়ে বড় সমস্যা।

৯০। সচরাচর আমার সন্তানে অন্যদের সাথে মানিয়ে চলে।

৯১। আমার সন্তান ঘন ঘন জিনিস পত্র হারিয়ে ফেলে।

৯২। আমার সন্তানের প্রায়ই মাথা ব্যথা করে।

৯৩। আমার সন্তান সহজেই হতাশ হয়।

৯৪। আমার সন্তান সহজেই হতবুদ্ধি হয়ে পড়ে।

৯৫। আমার সন্তান অন্য ছেলেমেয়ের নিকট খুবই জনপ্রিয়।

৯৬। আমার ছেলে সহজেই কিংকর্তব্য বিমুঢ় হয়ে পড়ে।

৯৭। আমার সন্তান প্রায় সময়ই হাসিখুশি থাকে।

৯৮। মেজাজের কারণে আমার সন্তান তার অনেক বন্ধুকে হারিয়েছে।

৯৯। আমার সন্তান সমবয়সীদের সাথে মিশতে লজ্জা পায়।

১০০। আমার ছেলেকে টয়লেট করানো খুব সমস্য হতো।

১০১। আমার সন্তান অসুস্থহলে আমাদের মনোযোগিতা বেশী বেশী প্রত্যাশা করে।

১০২। আমার ছেলে কোন কিছু ক্রয় করে ঠিকমত টাকা গুনে দিতে পারে।

১০৩। আমার সন্তান ঘড়ি দেখে ঠিকমত সময় বলতে পারে।

১০৪। অনেক সময় আমার সন্তান উগ্র হয়ে উঠে।

১০৫। আমার সন্তান নিজেই গোসল করতে পারে।

১০৬। আমার সন্তান ইদানিং বুকে ব্যথার কথা বলে।

১০৭। আমার সন্তানকে কমই সংশোধন বা সমালোচনা করার প্রয়োজন হয়।

১০৮। আমার সন্তানের আগ্রহ ও ক্ষমতা অন্য ছেলে মেয়েদের মতই।

১০৯। সম্প্রতি স্কুল কর্তৃপক্ষ আমার সন্তানের খারাপ আচরন সম্পর্কে আমাদেরকে অবহিত করেছেন।

১১০। মাঝে মাঝে আমার সন্তান সংসারের ছোট খাটো কাজে সাহায্য করতে অনীহা প্রকাশ করে।

১১১। আমার সন্তান প্রায়ই মৃত্য সংক্রান্ত বিষয়ে আলোচনা করে।

১১২। আমার সন্তানকে কোন বিষয়ে বুঝানো কষ্টকর।

১১৩। প্রায়ই আমার সন্তানের কক্ষটি অগোছালো থাকে।

১১৪। অপরিচিত লোকের সাথে কথা বলতে আমার সন্তান সচরাচর ভয় পায়।

১১৫। আমার সন্তানকে কখনও গালমন্দ বা শাস্তি দেয়ার প্রয়োজন হয় না।

১১৬। চার বছর বয়স থেকেই আমার সন্তান কাঁটা চামচ ব্যবহার করতে পারে।

১১৭। আমার সন্তান প্রায়ই চোখের সমস্যার কথা জানায়।

১১৮। প্রতিদিনের সম্ভাব্য দূর্ঘটনা থেকে রক্ষা করতে আমার সন্তানের সহায়তা প্রয়োজন হয়।

১১৯। অন্যদের জিনিসের প্রতিও আমার সন্তান যত্নবান।

১২০। আমার সন্তান ঘন ঘন হাত দিয়ে কান চাপা দেয়।

১২১। সবকিছু ত্রুটি মুক্ত হতে হবে তা না হলে আমার সন্তান সন্তুষ্ট হয় না।

১২২। চড় বা থাপ্পর দিলেও আমার সন্তানের উপর প্রভাব পড়ে না।

১২৩। আমার সন্তান নিজের ওজন বা আকার নিয়ে বেশী কথা বলে।

১২৪। সুনির্দিষ্ট কারণ ছাড়ায় আমার সন্তান মাঝে মাঝে কান্না করে।

১২৫। নতুন কিছু শুরু করার আগে আমার সন্তান যথেষ্ট শংকায় ভোগে।

১২৬। সাধারণতঃ কোন কিছুর ভাল দিকের প্রতিই আমার সন্তানের চোখে পড়ে।

১২৭। আমার সন্তানের অকারণে কান্নার অভ্যাস আছে।

১২৮। কোন কারণ ছাড়াই আমার সন্তান গরম অনুভব হওয়ার কথা বলে।

১২৯। বেশীভাগ সময় আমার সন্তানকে দূর্বল দেখায়।

১৩০। সবাই বলে আমার সন্তান খুবই স্মার্ট।

১৩১। অসুস্থতাকে আমর সন্তান অন্যদের তুলনায় বেশী কঠোর ভাবে নেয়।

১৩২। আমার সন্তান নিজের প্রতি করুণা করে।

১৩৩। যখন আমার সন্তান কথা বলে তখন অন্যরা সবসময়ই শোনে।

১৩৪। প্রায় সময় আমার সন্তান এমন সমস্যার কথা বলে যা ডাক্তার খুঁজে পায়না।

১৩৫। আমার সন্তানের একাকী থাকা আমার নিকট আশ্চর্য্যের মনে নয়।

১৩৬। আমার সন্তান সচরাচর অন্যের সাহায্য ছাড়াই কাজ করে।

১৩৭। আমার সন্তান সমালোচনাকে ভুল ভাবে গ্রহণ করে।

১৩৮। ক্ষুদ্র বস্তু আমর সন্তান কে কিংকর্তব্যবিমুড় করে।

১৩৯। আমার সন্তান নিজেকে নিয়ে ভাবতে পছন্দ করে।

১৪০। আমার পরিবার একত্রে আনেক দিন পরে বেড়াতে যায়।

১৪১। আমার সন্তান তার বুকের ধড়ফড়ানির কথা কখনও বলেনি।

১৪২। আমার সন্তান সচরাচর শান্ত থাকে।

১৪৩। কখনও কখনও আমার সন্তান অন্যদের মারাত্মক ভাবে আহত করেছে।

১৪৪। আমার সন্তান কখনও পা দুটি আটকে রাখে না।

১৪৫। মাঝে মাঝে আমার সন্তান কোন কারণ ছাড়াই চিৎকার করে ওঠে।

১৪৬। আমার সন্তান কোন কাজে বাধা পেলে চেঁচামেচি করে।

১৪৭। আমার সন্তানের মেধা শক্তির তেমন কোন বিশেষত্ব নেই।

১৪৮। অন্য যে কোন পরিবারের তুলনায় আমাদের পরিবারকে সূখী মনে হয়।

১৪৯। আমার সন্তানের পেশীর কম্পন হয়।

১৫০। আমার সন্তান চেষ্টা করলে স্কুলের ফলালফ আরো ভালো করতে পারে।

১৫১। জড়িয়ে ধরে শুয়ে থাকা আমর সন্তান কখনও পছন্দ করে না।

১৫২। আমাদের বৈবাহিক জীবন খবই অপ্রীতিকর।

১৫৩। সন্তানের পিতা সন্তানের প্রতি ঈর্ষা পরায়ন।

১৫৪। আমার সন্তানের পাগলামি দেখে আমি ভীত হয়।

১৫৫। আমার সন্তান অসুস্থতা সম্পর্কে কদাচিৎ অন্যদের সাথে আলাপ করে।

১৫৬। আমার সন্তানের মাংসপেশীতে কনকন হয়।

১৫৭। আমার সন্তান রাতে ঘুমের ঘোরে প্রায়ই উঠে দাড়ায়।

১৫৮। আমার সন্তানের বেশীর ভাগ বন্ধুই তার চেয়ে বয়সে বড়।

১৫৯। আমাদের বাড়িতে বিভিন্ন ধরনের শপথ করানোর রেওয়াজ আছে।

১৬০। আমার সন্তান কোন কিছু পরিচালনার দায়িত্ব নিতে চায় না।

১৬১। সমালোচনাকে আমার সন্তান সহজ ভাবে নেয়।

১৬২। আমার সন্তান ঘন ঘন আমার নিকট প্রতিজ্ঞা করে।

১৬৩। আমার সন্তান আমাদের সাথে বাইরে গেলে আমাদের কাছাকাছি থাকে।

১৬৪। আমার সন্তান স্কুলে কোন আনন্দ পায়না।

১৬৫। সন্তানের পিতা মাতা আলাদা আলাদা অবস্থায় থাকে।

১৬৬। আমার সন্তান সহজেই পরিশ্রান্ত হয়ে পড়ে।

১৬৭। আমার সন্তান ঠিকমত তৈরী করতে পারে না।

১৬৮। আমার সন্তান আমাদের সাথে বাইরে গেলে আমাদের কাছাকাছি থাকে।

১৬৯। আমার সন্তান প্রায়ই তার হাত মোচড়ায়।

১৭০। সন্তানের পিতা মাতার বিবাহবিচ্ছেদ ঘটেছে।

১৭১। মাঝে মাঝে আমার সন্তান আমার টুকি টাকি কাজ করে।

১৭২। আমার সন্তান প্রয়োজনে দীর্ঘক্ষন বাড়ীতে অবস্থান করে।

১৭৩। আমার সন্তান মাঝে মাঝে স্বল্প সময়ের জন্য অচেতন হয়ে পড়ে।

১৭৪। আমার সন্তানের মুখ মন্ডল কম্পিত হয়না।

১৭৫। আমার সন্তান সচরাচর হাটার চেয়ে দৌড়ানো পছন্দ করে।

১৭৬। বেশী ভাগ শিশুর থেকে আমার সন্তান আলাদা প্রকৃতির।

১৭৭। আমার সন্তানের মারা যাওয়ার ভয় আছে।

১৭৮। আমার সন্তান খোদা ভীরু।

১৭৯। আমার সন্তান কৌতুক করা পছন্দ করে না।

১৮০। আমার সন্তান ছুটির দিনে সচরাচর ঘুমিয়ে থাকে।

১৮১। আমার সন্তান প্রায়ই দীর্ঘক্ষন তার কক্ষে অবস্থান করে।

১৮২। আমার সন্তানের কখনও পক্ষাঘাত (paralysis) হয় নি।

১৮৩। আমার সন্তান কদাচিৎ নিয়ম ভঙ্গ করে।

১৮৪। আমার সন্তানের বেড়ে ওঠা বাড়িতে কোন সমস্যা তৈরী করেনি।

১৮৫। আমার সন্তান প্রায়ই আত্মহত্যার হুমকি দেয়।

১৮৬। আমার সন্তান সাধারণতঃ অন্যদের বিশ্বাস করে না।

১৮৭। আমার সন্তনের বিপরিত লিংগের বন্ধুর সংখ্যা বেশী।

১৮৮। আমাদের পারিবারিক জীবন সম্পর্কে আমার সন্তান মনে হয় সুখী নয়।

১৮৯। অন্যদের মন্তব্য হল আমার সন্তান মুড (Mood) নিয়ে থাকে।

১৯০। বিদ্বেষ প্রদর্শন করা আমার সন্তানের একটি সমস্যা।

১৯১। কোন কিছুই আমার সন্তানের দৃষ্টির বাইরে নয়।

১৯২। আমর সন্তান বাস্তব বাদী নয়।

১৯৩। আমার সন্তান কোন বিষয়ে মনোযোগী হতে পারে না।

১৯৪। সন্তানের পিতামাতা ধর্মীয় বিষয়ে সক্রিয় নন।

১৯৫। আমার সন্তান খাদ্য দ্রব্য না চিবিয়ে খেতে বেশী পছন্দ করে।

১৯৬। আমার সন্তান তার বন্ধুদের সাথে বেশী রাত পর্যন্ত কাটাতে পছন্দ করে।

১৯৭। স্কুল আমর সন্তানের জন্য খুবই আনন্দের।

১৯৮। আমার সন্তান স্কুল ভীতির কারণে ক্লাসে স্থির ভাবে বসে থাকতে পারেনা।

১৯৯। আমার সন্তানের অধিকাংশ বন্ধু-বান্ধব আমার পছন্দ হয় না।

২০০। ঘরে আবদ্ধ থাকা আামার সন্তানকে কখনও সমস্যায় ফেলে না।

২০১। আমার সন্তান সর্বদা অস্থির থাকে।

২০২। বিভিন্ন সময়ে চুরি করে আমার সন্তান সমস্যায় পড়েছে।

২০৩। আমার সন্তান খুব কম পেট ব্যথার কথা জানায়।

২০৪। আমার সন্তান স্কুলে ভাল রেজাল্ট করতে কখনও ব্যর্থ হয়নি।

২০৫। অপরিচিত লোক দেখলে আমার সন্তান ভয় পায়।

২০৬। আমাদের আয়ে আমরা স্বচ্ছল ভাবে চলতে পারিনা বলে আমার সন্তান মনে করে।

২০৭। আমার সন্তান সংখ্যা গননা করতে পছন্দ করে।

২০৮। আমার সন্তান কখনও পুলিশের জন্য সমস্যা হয়নি।

২০৯। আমার সন্তান কে খুব কমই ডাক্তারকে দেখাতে হয়।

২১০। আমার সন্তান শিশু শ্রেণীর ছড়া বেশী পছন্দ করে।

২১১। সন্তানের পিতা সন্তানকে ঠিক মত বুঝতে পারেনা।

২১২। কম ঘুমালেও আমার সন্তানের সমস্যা হয় না।

২১৩। সন্তানের পিতা নেশা করে।

২১৪। আমার সন্তান নিজেকে জাহির করতে বেশী যত্নবান।

২১৫। আমার সন্তান সমবয়সিদের তুলনায় অপেক্ষাকৃত বয়সকদের সাথে সময় কাটাতে আগ্রহী

২১৬। আমার সন্তান কিছুটা একগুয়ে প্রকৃতির।

২১৭। আমার সন্তান কম কথা বলে ।

২১৮। আমাদের পরিবারের সব সদস্যদের একসাথে খাওয়ার অভ্যাস খব কম।

২১৯। বই পড়ে সময় কাটাতে আমার সন্তান বেশী পছন্দ করে।

২২০। বাড়ীর গুরুত্ব পূর্ণ কোন সিদ্ধান্ত সন্তানের পিতাই নিয়ে থাকেন।

২২১। খারাপ দিন গুলো আমার সন্তানের বেলায় ঘন ঘন আসে।

২২২। ঘুমানোর সময় আলো জ্বেলে রাখার জন্য আমার সন্তান জেদ করে।

২২৩। আমার সন্তান শিশুদের চেয়ে বড়দের বেশী পছন্দ করে।

২২৪। আমার সন্তান অন্যদের উপর নির্ভরশীল।

২২৫। আমার সন্তান অন্যদের তুলনায় ঠাণ্ডায় বেশী আক্রান্ত হয়।

২২৬। সন্তান লালন পালনে পিতামাতার মধ্যে যথেষ্ট মতবিরোধ আছে।

২২৭।আমার সন্তান প্রায়ই তার ঘরের দরজা ভেতর থেকে বন্ধ রাখে।

২২৮। যৌক্তিক কারণ ছাড়াই আমার সন্তান প্রায় হেসে উঠে।

২২৯। আমার সন্তান মাঝে মাঝে স্কুলে লাফালাফি করে।

২৩০। বেশির ভাগ ছেলে মেয়েদের মত আমার সন্তান শক্তিশালী নয়।

২৩১। অন্যরা আমার সন্তানকে যথেষ্ট আত্মবিশ্বাসী মনে করে।

২৩২। অন্যরা আমার সন্তানকে যথেষ্ট বুদ্ধিমান মনে করে।

২৩৩। আমার সন্তান যা বলে, তা বুঝেই বলে।

২৩৪। মাঝে মাঝে একই যুক্তির উপর সন্তানের পিতা দিনের পর দিন চলতে থাকে।

২৩৫। টাকার প্রতি আমার সন্তানের আগ্রহ সবচেয়ে বেশি।

২৩৬। আমার সন্তানকে প্রায়ই টয়লেটের মধ্যে খেলতে দেখেছি।

২৩৭। সন্তানের পিতা মাঝে মাঝে নেশা পান করে অচেতন হয়ে যান।

২৩৮। আমার সন্তান স্বাস্থ্যবান।

২৩৯। আমার সন্তানের ধারনা, অন্যরা তার বিরুদ্ধে চক্রান্ত করছে।

২৪০। সচরাচর আমার সন্তান বাড়ীর ভেতরে খেলে।

২৪১। সন্তানের পিতা তাঁর কাজ নির্দিষ্ট করেছে যা অবশ্যই মানতে হয়।

২৪২। প্রায়াই আমার সন্তান একাকি হাঁটে।

২৪৩। সন্তানের পিতা কিছু নিয়ম নির্দিষ্ট করেছে যা সন্তানকে অবশ্যই মেনে চলতে হয়।

২৪৪। আমার সন্তান প্রায়ই উদ্দেশ্যহীন ভাবে ঘোরাফেরা করে।

২৪৫। আমার সন্তান বিভিন্ন সময়ে পালিয়ে যাওয়ার ভয় দেখিয়েছে।

২৪৬। মাঝে মাঝে আমার সন্তানের মারাত্মক শ্বাস কষ্ট হয়।

২৪৭। রাতে খাবার টেবিলে আমাদের বিভিন্ন ধরণের যুক্তি তর্ক চলে।

২৪৮। আমার সন্তান যাদের সাথে খেলে তারা সাংঘাতিক প্রকৃতির।

২৪৯। আমার সন্তানের নাক দিয়ে কদাচিৎ রক্ত পড়ে।

২৫০। আমার সন্তান কখনও তাঁর শিক্ষা প্রতিষ্ঠান থেকে বিতাড়িত হয়নি।

২৫১। আমার সন্তান ঘ্যানর ঘ্যানর করে কাঁদে।

২৫২। আমার সন্তান কখনও বাড়ি থেকে পালিয়ে যায়নি।

২৫৩। আমার সন্তান উচ্চমানের মেধার স্বাক্ষার রেখেছে।

২৫৪। উচ্চস্বরে কথা বললেও আমার সন্তানের সমস্যা হয় না।

২৫৫। শিশুকালে আমার সন্তানের বদমেজাজ আমাদের বেশ ভুগিয়েছে।

২৫৬। কোন কিছুর ভাগাভাগিতে আমার সন্তানের সমস্যা হয় না।

২৫৭। সন্তানের পিতা মাতা গুরুত্বপূর্ণ বিষয়ে নেওয়ার পূর্বে সবসময় আলোচনা করেন।

২৫৮। আমার সন্তান বাড়ীতে ও ধুমপান করে।

২৫৯। সন্তানের পিতা ঘন ঘন সন্তানকে তিরস্কার করেন।

২৬০। বড়দের সাথে মিশতে আমার সন্তান লজ্জা পায়।

২৬১। আমার সন্তানকে নেশা করতে দেখেছি।

২৬২। আমার সন্তান অনেকটা অমনোযোগী।

২৬৩। আমার সন্তান অন্ধকারকে ভয় পায়।

২৬৪। স্কুলের শিক্ষককে কিছু দিতে পারলে আমার সন্তান গর্ব বোধ করে।

২৬৫। আমার সন্তান ভীরু প্রকৃতির নয়।

২৬৬। সন্তানের পিতা সন্তানটিকে খুবই শাসন করেন।

২৬৭। আমার সন্তান তার কক্ষকে পরিস্কার রাখতে পারে না।

২৬৮। প্রতিদিনের যে কোন সমস্যা মোকাবেলা করতে আমার সন্তান সক্ষম।

২৬৯। আমার সন্তান টিভি দেখে বেশির ভাগ সময় কাটায়।

২৭০। আমার সন্তান ঘন ঘন জ্বরে আক্রান্ত হয়।

২৭১। সন্তানের পিতা খুব কম সময়ই বাড়ীতে থাকে।

২৭২। আমার সন্তানের কথার অর্থ প্রায়ই আমি বুঝি না।

২৭৩। আমার সন্তান অত্যাধিক পরিস্কার পরিচ্ছন্ন থাকে।

২৭৪। আমার সন্তান বোকার মত কথা বলে।

২৭৫। উদ্বিগ্ন হওয়ার মত যথেষ্ট উপকরণ আমাদের বাড়ীতে রয়েছে।

২৭৬। বিভিন্ন সময়ে আমার সন্তান অন্যদের মেরে ফেলার হুমকি দিয়েছে।

২৭৭। সন্তানের পিতা খুব কম সময়ই সন্তানের সাথে ব্যয় করেন।

২৭৮। আমার সন্তান কদাচিৎ পিঠের ব্যথা অনুভব করে।

২৭৯। সন্তানের পিতা সন্তানের সাথে খুব কম ধৈর্য্যশীল।

২৮০। সন্তানের পিতামাতা নিজেদের মধ্যে প্রায়ই ঝগড়া করেন।

২৮১। আমার সন্তানের অনুভূতিগুলো সহজেই পীড়া দেয়।

২৮২। আমার সন্তান সর্বদা মিথ্যা কথা বলে।

১৮৩। আমার সন্তান প্রায়ই ক্ষতিগ্রস্থ হয়।

২৮৪। আমার সন্তান দৌড়ানো খেলা বেশী পছন্দ করে।

২৮৫। আমার সন্তান সর্বদা মিথ্যা কথা বলে।

২৮৬। প্রায়ই আমার সন্তান অন্যদের খেলনা নষ্ট করে/ ভেঙ্গে ফেলে।

২৮৭। সচরাচর অন্যের কষ্টে আমার সন্তান দুঃখ অনুভব করে।

২৮৮। করমর্দন (হ্যান্ডশেক) করতে গেলে আমার সন্তান মাঝে মাঝে নার্ভাস হয়ে যায়।

২৮৯। আমার সন্তানের আকৃতি বয়সের তুলনায় ছোট।

২৯০। মাঝে মাঝে আমার মনে হয় আমি সন্তানের প্রতি খুবই উদার।

২৯১। আমার সন্তান স্কুলের একজন শিক্ষক/কর্মচারীকে আঘাত করেছিল।

২৯২। ঘুমুতে যাওয়ার পূর্বে আমার সন্তান সাধারণত পিতা-মাতাকে চুমু দেয়।

২৯৩। আমার সন্তানের চোখ নীল রংএর।

২৯৪। আমার সন্তান মাঝে মাঝে নিজের মধ্যে অন্যের অস্তিত্ব আনুভব করে।

২৯৫। ছোটবেলায় আমার সন্তানের পোশাক পরাতে সমস্যা হতো।

২৯৬। একবার মাথায় আঘাত পেয়ে আমার সন্তান জ্ঞান হারিয়েছিল।

২৯৭। আমার সন্তান কদাচিত গভীর ঘুমে নিমগ্ন থাকে।

২৯৮। টেনশন মুক্ত থাকার জন্য আমার সন্তান ঔষধ সেবন করে।

২৯৯। শৈশবে আমার সন্তান তার তীক্ষ্ণ খেলনা দিয়ে অন্য শিশুদের মাথায় আঘাত করত।

৩০০। ক্ষুধা পেয়েছে বলে আমার সন্তান প্রায়ই অভিযোগ করে।

৩০১। তোঁতলানো আমার সন্তানের একটি সমস্যা।

৩০২। আমার সন্তান কোন কিছু না পাওয়া পর্যন্ত চাইতে থাকে।

৩০৩। কিছু নির্দিষ্ট খাবার আমার সন্তানকে অসুস্থ করে।

৩০৪। আমার সন্তান বিছানায় সচরাচর নগ্ন অবস্থায় থাকে।

৩০৫। আমার সন্তান মাঝে মাঝে চুল আঁচড়ায় না।

৩০৬। আমার সন্তানকে শুধুমাত্র ডাকলেই কাছে আসে।

৩০৭। আমার সন্তান কদাচিত হাঁসে।

৩০৮। খাওয়া দাওয়া আমার সন্তনের জন্য কোন সমস্যা নয়।

৩০৯। আমার সন্তান বিপরীত লিংগের ছেলেমেয়েদের সাথেই বেশী খেলে।

৩১০। আমার সন্তান এক বছর বয়সে বসতে শিখেছিল।

৩১১। আমার সন্তান অলিক শব্দ শুনতে পায়।

৩১২। আমার সন্তান দুষ্টু ছেলেদের সাথে মেশে।

৩১৩। আমার সন্তান কোনকিছু ভালভাবে না বুঝেই বলে ফেলে।

৩১৪। মাঝে মাঝে আমার সন্তান জীব-জন্তুর সাথে নিষ্ঠুর আচরণ করে।

৩১৫। আমার সন্তান প্রাণী দেখে ভয় পায়।

৩১৬। আমার সান্তন পোষা প্রাণীকে যথেষ্ট ভালবাসা দেখায়।

৩১৭। আমার সন্তান অন্যদের তুলনায় বেশি নার্ভাস থাকে।

৩১৮। আমার সন্তান সচরাচর তার থালার সবটুকু খাবারই খায়।

৩১৯। আমার সন্তান ছুরি/চাকু সাথে রাখে।

৩২০। আমার মনে হয় সন্তানের সাথে আমি খুবই ঘনিষ্ট।

৩২১। আমার সন্তান ক্লাব বা ক্লাসে কখনই নির্বাচিত হতে পারেনি।

৩২২। আমার সন্তান অলিক বস্তুর অনুভূতি পায়।

৩২৩। কেউ আঘাত পেলে আমার সন্তান উদ্বিগ্ন হয়।

৩২৪। আমার সন্তান "বোবায় ধরা" স্বপ্ন সম্পর্কে আলাপ করে আনন্দ পায়।

৩২৫। মাঝে মাঝে আমার সন্তান নিজের মুখমন্ডলে আঁচড় কাটে।

৩২৬। মাঝে মাঝে আমার সন্তানের গলার স্বর শুনে বুঝা যায় সে কাজটি করবে কি না।

৩২৭। আমার সন্তান প্রায়ই পেছনে থেকে কথাবলে।

৩২৯। একবার আমার সন্তানের মাথায় অস্ত্রপাচার করতে হয়েছিল।

৩৩০। আমার সন্তানকে প্রথম প্রথম স্কুলে নিতে সমস্যা হত।

৩৩১। আমার সন্তান একটি ক্লাবের সদস্য।

৩৩২। বিপরিত লিংগের শিশুদের দেখে আমার সন্তান লজ্জা পায়।

৩৩৩। আমার সন্তান প্রায়ই কৌতুক পরিবেশন করে।

৩৩৪। আমার সন্তান সাধারণত ঃ অন্যদের তুলনায় বেশী কথা বলে।

৩৩৫। বাড়ীর কর্তা কে তা আমার সন্তানকে প্রায়ই বুঝাতে হয়।

৩৩৬। আমার সন্তান পাঁচ বছর বয়সে সিঁড়ি দিয়ে উঠতে পারতো।

৩৩৭। আমার সন্তান অন্যদের নিয়ে কৌতুক পছন্দ করে।

৩৩৮। লজ্জা পাওয়া আমার সন্তানের একটি বড় সমস্যা।

৩৩৯। অন্যদের মত আমার সন্তান নিজেই শরীর পরিস্কার করতে পারে।

৩৪০। রেগে গেলে আমার সন্তান প্রায়ই জিনিসপত্র ছুড়াছুড়ি করে।

৩৪১। আমার সন্তানের বিরক্তিকর আচরণ প্রায়ই আমাকে সমস্যায় ফেলে।

৩৪২। যৌনতা সংক্রান্ত আচরণ আমার সন্তানকে কখনো সমস্যায় ফেলেনি।

৩৪৩। আমার সন্তান সহজেই পরাজয় মেনে নেয়।

৩৪৪। অন্যদের সাথে মিশে খেলতে আমার সন্তানের সমস্যা হয়।

৩৪৫। সন্তানের মায়ের ঘন ঘন কান্নার অভ্যাস আছে।

৩৪৬। গালাগালি করলে আমার সন্তান কান্না করে।

৩৪৭। ব্যর্থতা আমার সন্তানের একটি বড় সমস্যা।

৩৪৮। আমার সন্তান মাঝে মাঝে ঠোঁট কামড়ায়।

৩৪৯। আমার সন্তান বসা অবস্থায় এদিক ওদিক শরীর দোলাতে থাকে।

৩৫০। সন্তানের পিতা ঘনঘন চাকুরী বদল করে।

৩৫১। মাঝেমাঝে আমার সন্তান বিছানায় প্রস্বাব করে।

৩৫২। আমার সন্তান স্কাউটের সাথে জড়িত।

৩৫৩। আমার সন্তান খাওয়ার পর প্রায়ই বমি করে।

৩৫৪। আমার সন্তান কোন কিছুকেই ভয় পায় না।

৩৫৫। আমার সন্তান অন্যদের প্রতি খুব ঈর্ষা পরায়ন।

৩৫৬। এক নাগারে পাঁচ মিনিটও আমার সন্তান বসে থাকতে পারে না।

৩৫৭। আমার সন্তান মানসিকভাবে আমাদেরকে অসুস্থ রাখে।

৩৫৮। আমার সন্তান ঘুমানোর পূর্বে ঘুমের বড়ি খায়।

৩৫৯। আমার সন্তান তার বিছানা ব্যতীত অন্যত্র ঘুমাতে চায় না।

৩৬০। যখন তখন আমাদেরকে না জানিয়ে আমার সন্তান টাকাপয়সা নেয়।

৩৬১। পরিবারের সবাই একসাথে ধর্মীয় অনুষ্ঠানে অংশগ্রহন করে।

৩৬২। আমাদের পরিবারে সহানুভূতি প্রদর্শনের অভাব নেই।

৩৬৩। আমার সন্তান অন্যদের খুব সমালোচনা করে।

৩৬৪। আমার সন্তান খুব কমই ভুল করে।

৩৬৫। মাথা ব্যথা বাড়লে আমার সন্তান প্রায়ই বমি করে।

৩৬৬।আমার সন্তান বাইরে গেলে সর্বদা দুশ্চিন্তায় থাকতে হয়।

৩৬৭। চার বছর বয়সে আমার সন্তান সিঁড়ি দিয়ে উঠতে পারতো।

৩৬৮। আমার সন্তান প্রায়ই টয়লেট নোংরা করে।

৩৬৯। আঙ্গুল চিবানো আমার সন্তানের একটি সমস্যা।

৩৭০। গত কয়েক বছর সন্তান রেখে খুব কমই বাইরে গিয়েছি।

৩৭১। আমার সন্তান সচরাচর ভুল পথে প্রবেশ করে।

৩৭২। আমার সন্তান নিয়ে সবাই উপহাস করে।

৩৭৩। আমার সন্তান প্রায়ই সকালে ঘুম থেকে উঠে।

৩৭৪। তর্ক করাই আমার সন্তানের সবচেয়ে বড় অধঃপতন।

৩৭৫। মাঝে মাঝে আমার ছেলে চক্কর দিয়ে ঘুরতে থাকে।

৩৭৬। কুঁচকানো ত্বক আমার সন্তানের জন্য সমস্যা।

৩৭৭। আমার সন্তান প্রায়ই ছড়া বলে।

৩৭৮। আমার সন্তানের শ্বাসকষ্ট (asthma) হয়েছিল।

৩৭৯। দুর্ঘটনায় আমার সন্তান মারাত্মকভাবে আহত হয়েছিল।

৩৮০। অন্যরা আমার সন্তানকে বুঝতে চায় না।

৩৮১। আমার সন্তান অন্যদের মত ব্যাথানুভূতি করতে পারে না।

৩৮২। সন্তানের মাতা ও পিতা মধ্যে ছাড়াছাড়ি হয়নি।

৩৮৩। খেলাকে কৌতুক হিসেবে নেয়ার চেয়ে খেলায় জয়লাভ করাই আমার সন্তানের কাছে বেশী গুরুত্বপূর্ণ

৩৮৪। আমার সন্তানের ঔষধি খাবার খাওয়াতে হয়।

৩৮৫। আমার সন্তানকে সব ধরনের খাবার থেকে বিরত রাখতে সমস্যা হয়।

৩৮৬। আমার সন্তান প্রায়ই আশ্চর্য্যজনক বস্তু দেখে।

৩৮৭। আমার সন্তান ঘন ঘন অন্যদের সাথে তর্কে জড়িয়ে পড়ে।

৩৮৮। আমার সন্তান বার বার সংখ্যা ও অক্ষরের পুনরাবৃত্তি করে।

৩৮৯। সম্প্রতি সন্তানের পিতা/মাতা স্কুল কৃর্তপক্ষেল সাতে তর্ক-বিতর্ক করেছে।

৩৯০। আমার সন্তান নির্দিষ্ট বিষয়ে স্থির না থেকে অন্য বিষয়ের অবতারনা করে।

৩৯১। পাঁচ বছর বয়স থেকেই আমার সন্তান বাঁধা পোশাক ছাড়া সবধরনের পোশাক পরতে পারতো।

৩৯২। আমার সন্তান সর্বদা খেলতে যাওয়ার আগে আমাদেরকে অবহিত করে।

৩৯৩। আমরা খুব কমই সন্তানের স্কুলে যায়।

৩৯৪। আমার সন্তান বেশির ভাগ সময়ই খিঁটখিঁটে থাকে।

৩৯৫। আমরা সব সন্তানের প্রতি সমান মনোযোগী হওয়ার চেষ্টা করি।

৩৯৬। আমার সন্তানকে ঘন ঘন ডাক্তারের কাছে নিতে হয়।

৩৯৭। আমার সন্তান দলবদ্ধ থাকতে পছন্দ করে।

৩৯৮। সন্তানের পিতা সন্তানের কারণে জরিমানা দিয়েছিল।

৩৯৯। অন্যদের তুলনায় আমার সন্তান যৌনতা বিষয়ে বেশি সচেতন।

৪০০। ঘুমানোর পরেও আমার সন্তান সচরাচর বিছানাতে থাকে।

৪০১। কারো সাথে আমার সন্তানের ঝগড়া হয়নি এমনদিন খুব কমই আছে।

৪০২। আমার সন্তান প্রায়ই অভিধান (dictionary) পড়ে।

৪০৩। রহস্যপূর্ণ কাজ করতে আমার সন্তান বেশি পছন্দ করে।

৪০৪। আমার সন্তান বদমেজাজী।

৪০৫। আমার সন্তান খুব কমই দিবা স্বপ্ন দেখে।

৪০৬। আমার সন্তান বাড়ীর আশে পাশে কাজ করতে অস্বীকৃতি জানায়।

৪০৭। আমার সন্তানটি দত্তক নেওয়া।

৪০৮। আমার সন্তান সর্বদা গরম পোশাক পরতে উৎসাহি হয়।

৪০৯। শিশুকালে আমার সন্তানের গলাতে কোন সমস্যা হয়নি।

৪১০। আমার সন্তান তার উদ্দেশ্য বা লক্ষকে অনেক উচুতে নির্ধারন করে থাকে।

৪১১। আমার সন্তানের মাথা ব্যথা সচরাচর কাঁধের পেছন থেকে শুরু হয়।

৪১২। আমার সন্তান প্রতিবছর নিউমোনিয়ায় আক্রান্ত হয়।

৪১৩। সম্প্রতি আমার সন্তান ডায়ারিয়ায় মারাত্নক ভাবে আক্রান্ত হয়েছিল।

৪১৪। আমার সন্তান যা শুনে তা তোতাপাখির মতো বলে।

৪১৫। আমার সন্তান তিন বছর বয়সে নিজে নিজে টয়লেটে যেতে পারতো।

৪১৬। আমার সন্তানের জন্মের পর মারাত্নক শ্বাস কষ্ট হয়েছিল।

৪১৭। আমার সন্তানের কাজগুলোর কোন উদ্দেশ্য বা লক্ষ্য থাকে না।

৪১৮। আমার সন্তান শিশুকালে দুধ খেতে চাইতো না/ পারতো না।

৪১৯। আমার সন্তান নির্দিষ্ট সময়ের অনেক আগে/ পূর্বে জন্ম গ্রহন করেছিল।

৪২০। ঘুমন্ত অবস্থায় নড়াচড়া করলেও আমার সন্তানের ঘুমের ব্যাঘাত ঘটে না।

1	T	F		46	T	F		91	T	F	
2	T	F		47	T	F		92	T	F	
3	T	F		48	T	F		93	T	F	
4	T	F		49	T	F		94	T	F	
5	T	F		50	T	F		95	T	F	
6	T	F		51	T	F		96	T	F	
7	T	F		52	T	F		97	T	F	
8	T	F		53	T	F		98	T	F	
9	T	F		54	T	F		99	T	F	
10	T	F		55	T	F		100	T	F	
11	T	F		56	T	F		101	T	F	
12	T	F		57	T	F		102	T	F	
13	T	F		58	T	F		103	T	F	
14	T	F		59	T	F		104	T	F	
15	T	F		60	T	F		105	T	F	
16	T	F		61	T	F		106	T	F	
17	T	F		62	T	F		107	T	F	
18	T	F		63	T	F		108	T	F	
19	T	F		64	T	F		109	T	F	
20	T	F		65	T	F		110	T	F	
21	T	F		66	T	F		11	T	F	
22	T	F		67	T	F		112	T	F	
23	T	F		68	T	F		113	T	F	
24	T	F		69	T	F		114	T	F	
25	T	F		70	T	F		115	T	F	
26	T	F		71	T	F		116	T	F	
27	T	F		72	T	F		117	T	F	
28	T	F		73	T	F		118	T	F	
29	T	F		74	T	F		119	T	F	
30	T	F		75	T	F		120	T	F	
31	T	F		76	T	F		121	T	F	
32	T	F		77	T	F		122	T	F	
33	T	F		78	T	F		123	T	F	
34	T	F		79	T	F		124	T	F	
35	T	F		80	T	F		125	T	F	
36	T	F		81	T	F		126	T	F	
37	T	F		82	T	F		127	T	F	
38	T	F		83	T	F		128	T	F	
39	T	F		84	T	F		129	T	F	
40	T	F		85	T	F		130	T	F	
41	T	F		86	T	F		131	T	F	
42	T	F		87	T	F		132	T	F	
43	T	F		88	T	F		133	T	F	
44	T	F		89	T	F		134	T	F	
45	T	F		90	T	F		135	T	F	

136	T	F		166	T	F		197	T	F
137	T	F		167	T	F		198	T	F
138	T	F		168	T	F		199	T	F
139	T	F		169	T	F		200	T	F
140	T	F		170	T	F		201	T	F
141	T	F		172	T	F		202	T	F
142	T	F		173	T	F		203	T	F
143	T	F		174	T	F		204	T	F
144	T	F		175	T	F		205	T	F
145	T	F		176	T	F		206	T	F
146	T	F		177	T	F		207	T	F
147	T	F		178	T	F		208	T	F
148	T	F		179	T	F		209	T	F
149	T	F		180	T	F		210	T	F
150	T	F		181	T	F		211	T	F
151	T	F		182	T	F		212	T	F
152	T	F		183	T	F		213	T	F
153	T	F		184	T	F		214	T	F
154	T	F		185	T	F		215	T	F
155	T	F		186	T	F		216	T	F
156	T	F		187	T	F		217	T	F
157	T	F		188	T	F		218	T	F
158	T	F		189	T	F		219	T	F
159	T	F		190	T	F		220	T	F
160	T	F		191	T	F		221	T	F
161	T	F		192	T	F		222	T	F
162	T	F		193	T	F		223	T	F
163	T	F		194	T	F		224	T	F
164	T	F		195	T	F		225	T	F
165	T	F		196	T	F		226	T	F

227	T	F	272	T	F	317	T	F
228	T	F	273	T	F	318	T	F
229	T	F	274	T	F	319	T	F
230	T	F	275	T	F	320	T	F
231	T	F	276	T	F	321	T	F
232	T	F	277	T	F	322	T	F
233	T	F	278	T	F	323	T	F
234	T	F	279	T	F	324	T	F
235	T	F	280	T	F	325	T	F
236	T	F	281	T	F	326	T	F
237	T	F	282	T	F	327	T	F
238	T	F	283	T	F	328	T	F
239	T	F	284	T	F	329	T	F
240	T	F	285	T	F	330	T	F
241	T	F	286	T	F	331	T	F
242	T	F	287	T	F	332	T	F
243	T	F	288	T	F	333	T	F
244	T	F	289	T	F	334	T	F
245	T	F	290	T	F	335	T	F
246	T	F	291	T	F	336	T	F
247	T	F	292	T	F	337	T	F
248	T	F	293	T	F	338	T	F
249	T	F	294	T	F	339	T	F
250	T	F	295	T	F	340	T	F
251	T	F	296	T	F	341	T	F
252	T	F	297	T	F	342	T	F
253	T	F	298	T	F	343	T	F
254	T	F	299	T	F	344	T	F
255	T	F	300	T	F	345	T	F
256	T	F	301	T	F	346	T	F
257	T	F	302	T	F	347	T	F
258	T	F	303	T	F	348	T	F
259	T	F	304	T	F	349	T	F
260	T	F	305	T	F	350	T	F
261	T	F	306	T	F	351	T	F
262	T	F	307	T	F	352	T	F
263	T	F	308	T	F	353	T	F
264	T	F	309	T	F	354	T	F
265	T	F	310	T	F	355	T	F
266	T	F	311	T	F	356	T	F
267	T	F	312	T	F	357	T	F
268	T	F	313	T	F	358	T	F
269	T	F	314	T	F	359	T	F
270	T	F	315	T	F	360	T	F
271	T	F	316	T	F	361	T	F

362	T	F		393	T	F				
363	T	F		394	T	F				
364	T	F		395	T	F				
365	T	F		396	T	F				
366	T	F		397	T	F				
367	T	F		398	T	F				
368	T	F		399	T	F				
369	T	F		400	T	F				
370	T	F		401	T	F				
371	T	F		402	T	F				
372	T	F		403	T	F				
374	T	F		404	T	F				
375	T	F		405	T	F				
376	T	F		406	T	F				
377	T	F		407	T	F				
378	T	F		408	T	F				
379	T	F		409	T	F				
380	T	F		4410	T	F				
381	T	F		411	T	F				
382	T	F		412	T	F				
383	T	F		413	T	F				
384	T	F		414	T	F				
385	T	F		415	T	F				
386	T	F		416	T	F				
387	T	F		417	T	F				
388	T	F		418	T	F				
389	T	F		419	T	F				
390	T	F		420	T	F				
391	T	F			T	F				
392	T	F			T	F				

Aggression Scoring Key -১ম পৃষ্ঠা

1	T	F		46	●	F		91	T	F
2	T	F		47	T	F		92	T	F
3	T	F		48	T	F		93	T	F
4	T	F		49	T	F		94	T	F
5	T	F		50	T	F		95	T	F
6	T	F		51	T	F		96	T	F
7	T	F		52	T	F		97	T	F
8	T	F		53	T	F		98	T	F
9	T	F		54	T	F		99	T	F
10	T	F		55	T	F		100	T	F
11	T	F		56	T	F		101	T	F
12	T	F		57	T	F		102	T	F
13	T	F		58	T	F		103	T	F
14	T	F		59	T	F		104	●	F
15	T	F		60	T	F		105	T	F
16	T	F		61	T	F		106	T	F
17	●	F		62	T	F		107	T	F
18	T	F		63	T	F		108	T	F
19	T	F		64	T	F		109	T	F
20	T	F		65	T	F		110	T	F
21	T	F		66	T	F		11	T	F
22	T	F		67	T	F		112	T	F
23	T	F		68	T	F		113	T	F
24	T	F		69	T	F		114	T	F
25	T	F		70	T	F		115	T	F
26	T	F		71	T	F		116	T	F
27	T	F		72	T	F		117	T	F
28	T	F		73	T	F		118	T	F
29	T	F		74	T	F		119	T	F
30	T	F		75	T	F		120	T	F
31	T	F		76	T	F		121	T	F
32	T	F		77	T	F		122	T	F
33	T	F		78	T	F		123	T	F
34	T	F		79	T	F		124	T	F
35	T	F		80	T	F		125	T	F
36	T	F		81	T	F		126	T	F
37	T	F		82	T	F		127	T	F
38	●	F		83	T	F		128	T	F
39	T	F		84	T	F		129	T	F
40	T	F		85	T	F		130	T	F
41	T	F		86	T	F		131	T	F
42	T	F		87	T	F		132	T	F
43	●	F		88	T	F		133	T	F
44	T	F		89	T	F		134	T	F
45	T	F		90	T	F		135	T	F

Aggression Scoring Key -২য় পৃষ্ঠা

136	T	F		166	T	F		197	T	F
137	T	F		167	T	F		198	T	F
138	T	F		168	T	F		199	T	F
139	T	F		169	T	F		200	T	F
140	T	F		170	T	F		201	T	F
141	T	F		172	T	F		202	T	F
142	T	F		173	T	F		203	T	F
143	●	F		174	T	F		204	T	F
144	T	F		175	T	F		205	T	F
145	T	F		176	T	F		206	T	F
146	T	F		177	T	F		207	T	F
147	T	F		178	T	F		208	T	F
148	T	F		179	T	F		209	T	F
149	T	F		180	T	F		210	T	F
150	T	F		181	T	F		211	T	F
151	T	F		182	T	F		212	T	F
152	T	F		183	T	F		213	T	F
153	T	F		184	T	F		214	T	F
154	T	F		185	T	F		215	T	F
155	T	F		186	T	F		216	T	F
156	T	F		187	T	F		217	T	F
157	T	F		188	T	F		218	T	F
158	T	F		189	T	F		219	T	F
159	T	F		190	●	F		220	T	F
160	T	F		191	T	F		221	T	F
161	T	F		192	T	F		222	T	F
162	T	F		193	T	F		223	T	F
163	T	F		194	T	F		224	T	F
164	T	F		195	T	F		225	T	F
165	T	F		196	T	F		226	T	F

Aggression Scoring Key (PIC) শুদ্ধ পৃষ্ঠা

227	T	F		272	T	F		317	T	F
228	T	F		273	T	F		318	T	F
229	T	F		274	T	F		319	●	F
230	T	F		275	T	F		320	T	F
231	T	F		276	●	F		321	T	F
232	T	F		277	T	F		322	T	F
233	T	F		278	T	F		323	T	F
234	T	F		279	T	F		324	T	F
235	T	F		280	T	F		325	T	F
236	T	F		281	T	F		326	T	F
237	T	F		282	T	F		327	T	F
238	T	F		283	T	F		328	T	F
239	T	F		284	T	F		329	T	F
240	T	F		285	T	F		330	T	F
241	T	F		286	●	F		331	T	F
242	T	F		287	T	F		332	T	F
243	T	F		288	T	F		333	T	F
244	T	F		289	T	F		334	T	F
245	T	F		290	T	F		335	T	F
246	T	F		291	●	F		336	T	F
247	T	F		292	T	F		337	T	F
248	T	F		293	T	F		338	T	F
249	T	F		294	T	F		339	T	F
250	T	F		295	T	F		340	●	F
251	T	F		296	T	F		341	T	F
252	T	F		297	T	F		342	T	F
253	T	F		298	T	F		343	T	F
254	T	F		299	●	F		344	T	F
255	●	F		300	T	F		345	T	F
256	T	F		301	T	F		346	T	F
257	T	F		302	T	F		347	T	F
258	T	F		303	T	F		348	T	F
259	T	F		304	T	F		349	T	F
260	T	F		305	T	F		350	T	F
261	T	F		306	T	F		351	T	F
262	T	F		307	T	F		352	T	F
263	T	F		308	T	F		353	T	F
264	T	F		309	T	F		354	T	F
265	T	F		310	T	F		355	T	F
266	T	F		311	T	F		356	T	F
267	T	F		312	T	F		357	T	F
268	T	F		313	T	F		358	T	F
269	T	F		314	●	F		359	T	F
270	T	F		315	T	F		360	T	F
271	T	F		316	T	F		361	T	F

Aggression Scoring Key

৪র্থ পৃষ্ঠা

362	T	F		393	T	F				
363	T	F		394	T	F				
364	T	F		395	T	F				
365	T	F		396	T	F				
366	T	F		397	T	F				
367	T	F		398	T	F				
368	T	F		399	T	F				
369	T	F		400	T	F				
370	T	F		401	●	F				
371	T	F		402	T	F				
372	T	F		403	T	F				
374	T	F		404	●	F				
375	T	F		405	T	F				
376	T	F		406	T	F				
377	T	F		407	T	F				
378	T	F		408	T	F				
379	T	F		409	T	F				
380	T	F		4410	T	F				
381	T	F		411	T	F				
382	T	F		412	T	F				
383	T	F		413	T	F				
384	T	F		414	T	F				
385	T	F		415	T	F				
386	T	F		416	T	F				
387	●	F		417	T	F				
388	T	F		418	T	F				
389	T	F		419	T	F				
390	T	F		420	T	F				
391	T	F			T	F				
392	T	F			T	F				

Anxiety Scoring Key

1	T	F		46	T	F		91	T	F
2	T	F		47	T	F		92	T	F
3	T	F		48	T	●		93	T	F
4	●	F		49	T	F		94	T	F
5	T	F		50	T	F		95	T	F
6	T	F		51	T	F		96	T	F
7	T	F		52	T	F		97	T	F
8	T	F		53	●	F		98	T	F
9	●	F		54	T	F		99	T	F
10	●	F		55	T	F		100	T	F
11	T	F		56	T	F		101	T	F
12	T	F		57	T	F		102	T	F
13	●	F		58	T	F		103	T	F
14	T	F		59	T	F		104	T	F
15	T	F		60	T	F		105	T	F
16	T	F		61	T	F		106	T	F
17	T	F		62	T	F		107	T	F
18	T	F		63	T	F		108	T	F
19	●	F		64	T	F		109	T	F
20	T	F		65	T	F		110	T	F
21	●	F		66	T	F		11	T	F
22	T	F		67	T	F		112	T	F
23	T	F		68	T	F		113	T	F
24	T	F		69	T	F		114	T	F
25	T	F		70	T	F		115	T	F
26	T	F		71	T	F		116	T	F
27	T	F		72	T	F		117	T	F
28	T	F		73	T	F		118	T	F
29	T	F		74	T	F		119	T	F
30	T	F		75	T	F		120	T	F
31	T	F		76	T	F		121	T	F
32	T	F		77	●	F		122	T	F
33	T	F		78	T	F		123	T	F
34	T	F		79	T	F		124	T	F
35	T	F		80	T	F		125	●	F
36	T	F		81	T	F		126	T	●
37	T	F		82	●	F		127	●	F
38	T	F		83	T	F		128	T	F
39	T	F		84	T	●		129	T	F
40	T	F		85	●	F		130	T	F
41	T	F		86	T	F		131	T	F
42	T	F		87	T	F		132	T	F
43	T	F		88	T	F		133	T	F
44	●	F		89	T	F		134	T	F
45	T	F		90	T	F		135	T	F

Anxiety Scoring Key ২য় পৃষ্ঠা

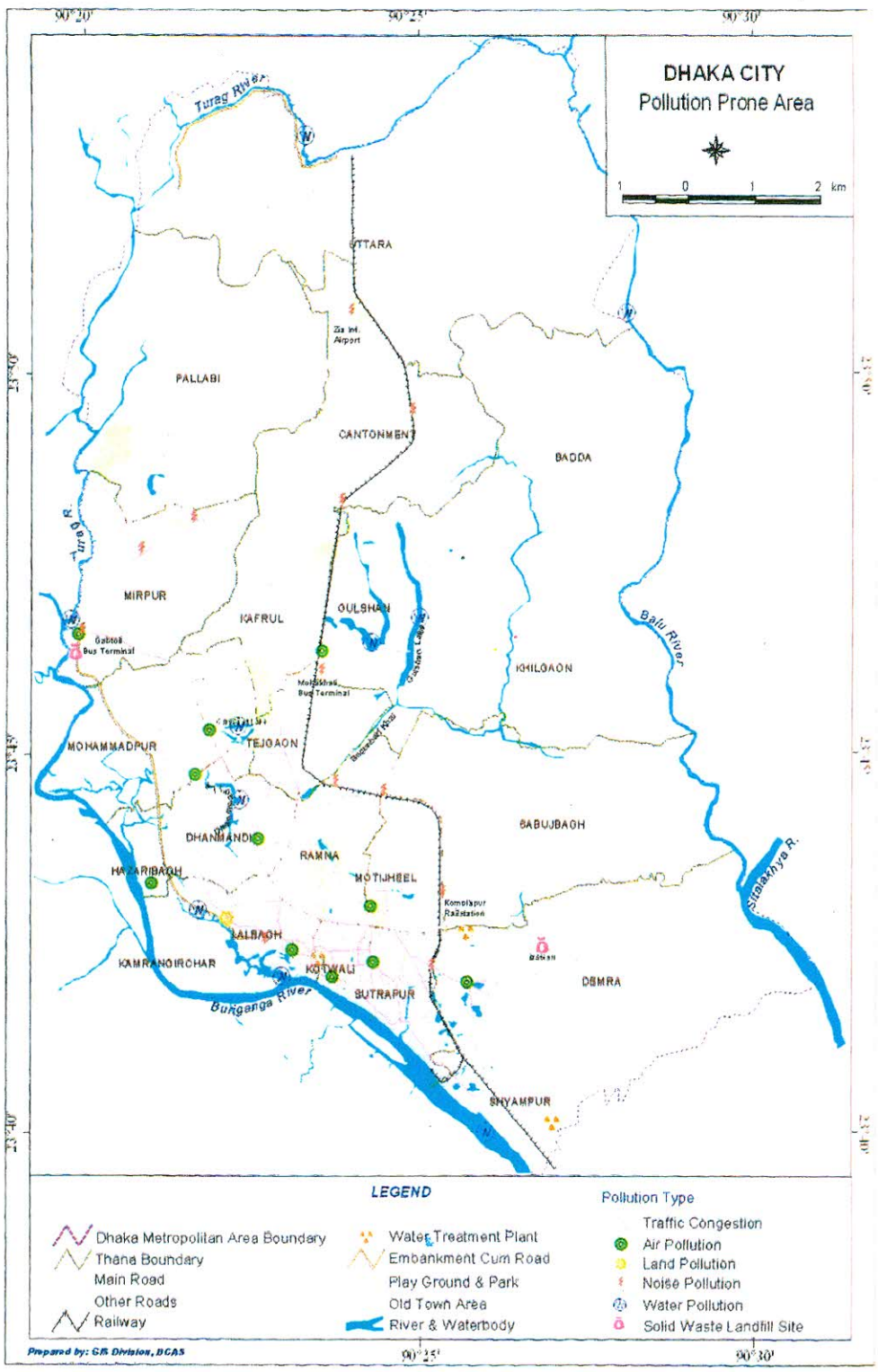
136	T	●		166	T	F		197	T	F
137	T	F		167	T	F		198	T	F
138	T	F		168	T	F		199	T	F
139	T	F		169	T	F		200	T	F
140	T	F		170	T	F		201	T	F
141	T	F		172	T	F		202	T	F
142	T	F		173	T	F		203	T	F
143	T	F		174	T	F		204	T	F
144	T	F		175	T	F		205	T	F
145	T	F		176	T	F		206	T	F
146	T	F		177	●	F		207	T	F
147	T	F		178	T	F		208	T	F
148	T	F		179	T	F		209	T	F
149	●	F		180	T	F		210	T	F
150	T	F		181	T	F		211	T	F
151	T	F		182	T	F		212	T	F
152	T	F		183	T	F		213	T	F
153	T	F		184	T	F		214	T	F
154	T	F		185	T	F		215	T	F
155	T	F		186	T	F		216	T	F
156	T	F		187	T	F		217	T	F
157	T	F		188	●	F		218	T	F
158	T	F		189	●	F		219	T	F
159	T	F		190	T	F		220	T	F
160	T	F		191	T	●		221	T	F
161	T	●		192	T	F		222	●	F
162	T	F		193	T	F		223	T	F
163	T	F		194	T	F		224	T	F
164	T	F		195	T	F		225	T	F
165	T	F		196	T	F		226	T	F

Anxiety Scoring Key ৩য় পৃষ্ঠা

227	T	F		272	T	F		317	T	F
228	T	F		273	T	F		318	T	F
229	T	F		274	T	F		319	T	F
230	T	F		275	T	F		320	T	F
231	T	F		276	T	F		321	T	F
232	T	F		277	T	F		322	T	F
233	T	F		278	T	F		323	●	F
234	T	F		279	T	F		324	T	F
235	T	F		280	T	F		325	T	F
236	T	F		281	T	F		326	T	F
237	T	F		282	T	F		327	T	F
238	T	F		283	T	F		328	T	F
239	T	F		284	T	F		329	T	F
240	T	F		285	T	F		330	T	F
241	T	F		286	T	F		331	T	F
242	T	F		287	T	F		332	T	F
243	T	F		288	T	F		333	T	F
244	T	F		289	T	F		334	T	F
245	T	F		290	T	F		335	T	F
246	T	F		291	T	F		336	T	F
247	T	F		292	T	F		337	T	F
248	T	F		293	T	F		338	T	F
249	T	F		294	T	F		339	T	F
250	T	F		295	T	F		340	T	F
251	T	F		296	T	F		341	T	F
252	T	F		297	T	F		342	T	F
253	T	F		298	T	F		343	T	F
254	T	F		299	T	F		344	T	F
255	T	F		300	T	F		345	T	F
256	T	F		301	T	F		346	T	F
257	T	F		302	T	F		347	T	F
258	T	F		303	T	F		348	T	F
259	T	F		304	T	F		349	T	F
260	T	F		305	T	F		350	T	F
261	T	F		306	T	F		351	T	F
262	T	F		307	T	F		352	T	F
263	●	F		308	T	F		353	T	F
264	T	F		309	T	F		354	T	●
265	T	F		310	T	F		355	T	F
266	T	F		311	T	F		356	T	F
267	T	F		312	T	F		357	T	F
268	T	F		313	●	F		358	T	F
269	T	F		314	T	F		359	T	F
270	T	F		315	●	F		360	T	F
271	T	F		316	T	F		361	T	F

Anxiety Scoring Key -৪র্থ পৃষ্ঠা

362	T	F		393	T	F				
363	T	F		394	T	F				
364	T	F		395	T	F				
365	T	F		396	T	F				
366	T	F		397	T	F				
367	T	F		398	T	F				
368	T	F		399	T	F				
369	T	F		400	T	F				
370	T	F		401	T	F				
371	T	F		402	T	F				
372	T	F		403	T	F				
374	T	F		404	T	F				
375	T	F		405	T	F				
376	T	F		406	T	F				
377	T	F		407	T	F				
378	T	F		408	T	F				
379	T	F		409	T	F				
380	T	F		4410	T	F				
381	T	F		411	T	F				
382	T	F		412	T	F				
383	T	F		413	T	F				
384	T	F		414	T	F				
385	T	F		415	T	F				
386	T	F		416	T	F				
387	T	F		417	T	F				
388	T	F		418	T	F				
389	T	F		419	T	F				
390	T	F		420	T	F				
391	T	F			T	F				
392	T	F			T	F				



Source: Dhaka City State of Environment-2005