شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قَسَـــم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

PSYCHIATRIC ASPECTS OF CHEMICAL POLLUTION

Thesis
Submitted for Partial Fulfillment of MD Degree
In
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BY

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بسم الله الرحمن الرحيم

﴿ قالوا سبحانك لا علم لنا إلا ما
علمتنا إنك أنت العليم الحكيم ﴾

صدق الله العظيم

(سورة البقرة . الآية — ٣٢)

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Pollution is a worldwide problem. In Egypt, no one will easily forget the black cloud that covered Cairo during summer of 1999. The ghost of the black cloud will continue to haunt us as long as unauthorized polluting activities and emissions from large, medium and small industries continue. Car exhausts fumes emitted by two million vehicles (Half of these vehicles are in Cairo alone, a governorate with a capacity for only 500000 vehicles), as well as dusts, the burning of garbage and agricultural waste were another reasons for the black cloud (*Baker, 2000*). According to Atmospheric Research and Information Center, Cairo has the highest pollution score among world capitals (*Hawkes, 2000*).

As physicians we understand the vital connection between the health and environment. Air pollution causes a wide variety of health effects that range from eye irritation, heart and lung damage, and premature death (*United States Environmental Protection Agency 'EPA', 1998*).

Air pollution is responsible for 6 per cent of deaths a year, according to estimates made by an international team using data from Austria, France and Switzerland. If their estimates are right this means that 40000 people died per year prematurely because of pollution. Vehicle pollution also accounts for more than 25,000 new cases of chronic bronchitis, more than half a million asthma attacks, and more than 16 million days lost to people through "restricted activities". The health costs of air pollution from traffic in the three countries amounted to 1.7 per cent of the gross domestic product, far exceeding those from traffic accidents (*Hawkes, 2000*).

Pollution not only causes somatic disorders but also psychological discomfort, psychological changes, and psychiatric symptoms (*Evan and cohen, 1987; Schottenfeld,. 1992*). Direct effects of air pollution are reinforced by other factors e.g., poor general health, malnutrition, and social disruptions (*Chivian, 1993*).

To date, psychiatrists have played a minor role in studying the psychiatric effects of exposure to pollution; despite the substantial contribution that the psychiatrists can do for individuals who are exposed to pollution (*Mearns et al, 1995*).

Air pollution indirectly affects psychological health and well being by contributing to physical illness. Asthma and chronic obstructive pulmonary disorder which often caused or aggravated by air pollution are sometimes accompanied by depression and anxiety, treatment of these conditions includes steroids and other drugs that have mood and anxiety symptoms among their side effects (*Lundeberg, 1996*).

Psychiatrists and other physicians need to be familiar with the medical consequences of air pollution, to evaluate and help those who may be worried about or have been injured by environmental trauma.

Also, pollution can cause psychiatric symptoms and/or disorders either by direct toxicological effects of the pollutants or as a results of psychological reaction to polluting events *(Schauer and Dornow, 2001)*

Both environmental stress and environmental toxins can produce symptoms compatible with anxiety, depression, cognitive and behavioral changes. Differential diagnosis must include organic mental disorders, adjustment disorders, and other reactive or preexisting psychiatric conditions (*Lundberg, 1996*).

Behavioral changes may be the first indications of damage to the nervous system. An individual exposed to a toxic substance may initially experience vague feelings of anxiety or nervousness. These feelings may

progress to depression, difficulty in sleeping, memory loss, confusion, loss of appetite, or speech impairment. In severe cases, a person may exhibit bizarre behavior, delirium, hallucinations, convulsions, or even death. Often, behavioral toxicological testing can detect an impairment for which investigators have not yet found a physiological or biochemical mechanism *(US Congress Office of Technology Assessment, 1990)*.

Lead is one of the most common air pollutants, its mean blood level in Cairo traffic policemen was significantly high (*Anwer, 1994*). Although this high blood lead level may be considered to be acceptable to their occupation, it indicates a potential risk for other groups of people such as children and pregnant women (*Kamal et al, 1991*).

Lead causes encephalopathy in adults, sometime apparent mainly as depressions, anxiety, sleep disorders, difficulty concentrating, irritability and fatigue. In children numerous studies have shown that lead causes changes in brain function and psychological performance at doses too low to cause clinical symptom, lead levels of 10μg/dl lower IQ. Lead also appears to alter attention and increase antisocial behavior (*Lundeberg, 1996*).

Psychiatric symptoms resulting from exposure to organic solvents range from mild mood fluctuations to more severe psychiatric disturbances that may meet the diagnostic criteria of the DSM-IV axis 1 diagnoses e.g., depression, anxiety or post traumatic stress disorders (*Morrow et al, 1993*). *Axelson et al, 1976; 1983* reported an increased risk of all psychiatric diagnoses after occupational exposure to organic solvents.

Persons who are adversely affected by organophosphate exposure are likely to be referred to psychiatrists because of mood swings, suicidality, cognitive impairment and chronic fatigue. Occasionally, they may be referred in the context of significant episodes of rage or drunkenness leading to criminal proceedings *(Jamal, 1997)*.

Each year, tens of millions of various types of chemical products are manufactured for commercial, industrial, agricultural, military, houshold and personal use around the world. Although the exact number is unknown, it is estimated that as many as 70 million different types of toxic and hazardous products are used just by the USA industries each year. Pesticides alone constituted 40,000 different formulations. It is these chemicals that contaminate our air, soil, streams, oceans, and underground water supplies, as well as our food and bodies. They are hazardous both during manufacturing and also during their usage (*Davoudian, 1993*).

Water pollution is another problem, *Badawy et al, 1995* found very high levels of petroleum and chlorinated hydrocarbons in water from lake Manzala and associated canals. There were high residues of organochlorine pesticides in fish and sediment from El-Temsah Lake in Suez Canal. In Cairo, there were very high levels of trihalomethanes in chlorinated drinking water. There is positive coliphage in more 60% of drinking and bottled drinking water samples from Cairo (*Badawy, 1992; El-Dib and Ali, 1992*).

Although insecticides can be beneficial to society, they can be dangerous if used carelessly or if they are not stored properly and out of the reach of children. Insecticides can pollute our air, water, and food (*United States Environmental Protection Agency 'EPA', 1992*).

The American Consumers Union's report raised some concern that the pesticides residues in certain foods would be hazardous to human health especially in certain vulnerable subgroups as children. Individual food samples often have multiple pesticide's residues. In the US survey, up to 37 different pesticides were detected in apples, and more than 20 in peaches, pears and spinach. The average methyl parathion residue on