The Full Extent of Alcoholism: A Worldwide Economic and Social Tragedy

Albert I. Wertheimer, Nicole M. Chaney

School of Pharmacy, Temple University, Philadelphia, PA 19140, USA.

ABSTRACT

Alcohol abuse affects many people directly or indirectly all over the world. Alcoholism often causes major damage and can also lead to death. It seems as though people underestimate the prevalence of alcohol abuse and the damage done by alcohol abuse. Loss of labour, birth defects, liver cirrhosis, and damage from vehicle accidents, are a small portion of the damage caused by alcohol abuse. The damage caused by alcohol abuse affects people physically, emotionally, and economically. All this damage is preventable. Treatment for this problem is available, but the effects differ among patients. Pharmacotherapy and cognitive behavioural therapy are used separately or collectively. Results can vary depending upon the treatment and patient. The pharmacist plays an important role in the lives of alcoholic patients. Pharmacists can notice a patient's behaviour, notice their prescription patterns, and most importantly, the pharmacist is a knowledgeable mentor that many patients look up to. Feeling comfortable with and trusting the pharmacist is very important for the patient. Patients may come to the pharmacist with their problems, and the pharmacist should be able to offer sound medical advice.

Keywords: *alcoholism, total cost of alcohol abuse, pharmacist intervention, pharmacotherapy for alcohol abuse, alcohol treatment*

INTRODUCTION

When we think about the most prevalent life threatening, debilitating, and harmful diseases, we think of AIDS, diabetes, heart disease, depression, and others. Very few people acknowledge or are aware of the complete effect of alcoholism, and how it affects individuals, families, friends, strangers, co-workers and society in general. Alcoholism is a worldwide problem of chronic drinking that affects all aspects of one's life. We hear about drunk drivers, automobile accidents and domestic violence associated with alcoholism, but rarely do we look beyond the individual or family perspective, it is a preventable massive expense to individuals, governments and society. We probably don't take

the consequences seriously enough because alcoholic beverages are sold openly everywhere and drinking is very much embedded in most cultures and societies. Let us look at the facts.

It has been found that alcohol dependence affects 7.5% of the US population. That represents approximately 14 million Americans. Alcoholism, untreated and treated, causes physical, emotional, and economic damage. The extent as to how many people are affected on a daily basis by this disease is innumerable. First, we will take a look at how individuals are affected. From the loss of earnings to the medical expenses, alcoholism can certainly cost an

alcoholic an immense amount of money. It has been found that almost two thirds of the costs of alcohol abuse are a result of loss of labour (1). Alcohol related problems cost the alcohol abusers about \$66.8 billion, which is 45% of the annual total cost of alcohol abuse just in the USA. The actual cost that abusers pay may actually be less than this figure, this is due to the fact that their family members and others pick up some of the cost (2).

There are many health problems associated with alcohol abuse. The most prevalent health problems are gastrointestinal. Gastrointestinal pain, bloating, nausea, and vomiting are all associated with alcohol abuse. Alcohol decreases the rate of gastric emptying, increases gastric secretions, and also damages the gastric mucosa. Gastritis and ulcers are common, and with heavy drinkers, pancreatitis is prevalent. The liver is the organ most affected by alcohol. Liver problems are associated with upper-right quadrant pain. There are many liver disorders such as cirrhosis, hepatitis, cholestasis, and portal hypertension (3). Alcohol-related liver disease (ALD) is the most prevalent liver disease in the United States, and patients with this disease make up the largest portion of liver transplant recipients, almost 27% in 1995. Almost 20% of ALD patients require a liver transplant. The demand for human liver donations is much greater than the supply available in the United States. In 2000 only 4934 patients received liver transplants, by April of 2001, there were 17,520 Americans waiting for a liver transplant (4).

Alcohol abuse affects the entire body, it causes many cardiovascular, haematological, gynaecologic, metabolic, and central nervous system problems. Hypertension, stroke, sudden death and heart failure are common cardiovascular disorders associated with alcohol abuse. Long-term alcohol abuse can suppress the production of leukocytes, erythrocytes and platelets. Anaemia is very common, as are many vitamin deficiencies that are due to poor absorption and poor intake of vitamins. The fact that over half the alcoholic's caloric intake is alcohol further displays the problem, which causes electrolyte imbalances and also malnutrition. Alcoholism also affects neurological function, decreasing memory, motor skills, and affecting neuron transmittance. Alcoholism affects all aspects of the abuser, both physically and mentally. Not only can alcohol abuse result in physical problems, it can result in

psychological disorders also. Depression affects approximately 33% of problem drinkers. Depression affects the response of patients to treatment and also their relapse rate. The high relapse rate results from negative emotional states and recurrent relapses may cause a feeling of helplessness, causing drinkers to feel that their drinking is out of control and that they will never be able to stop drinking (5).

Alcoholism and the side effects associated with it often lead to sudden and early death. Not only does alcoholism affect the abuser, non-abusers are also affected, it has been shown that alcohol abuse costs non-abusers \$81.2 billion annually in the USA. Family members and household members are affected immensely. Non-abuser victims are directly responsible for 6% of the alcohol related costs, but indirectly much more, with taxpayers picking up the bill that the government has to pay.

In addition to adults and children being affected by alcohol abuse, fetuses are also affected by alcohol abuse. Almost 5,000 babies are born each year with Foetal Alcohol Syndrome (FAS). This is approximately one in every 750 births. The rate of FAS is much higher in Native Americans, than that of Caucasian or African-Americans. A child with FAS may have a variety of problems, such as pre-natal and post-natal developmental problems, various facial malformations, various organ malformations, and also central nervous system problems. Foetal Alcohol Effects (FAE) occurs in 3-5 out of 1,000 live births and it results in milder symptoms, such as low birth weight. Foetal Alcohol Effects results from pregnant mothers who drink less alcohol than those with FAS children. Treatment of infants, children and adults with FAS in 1992 cost over \$1.9 billion. It costs about \$1.4 million to treat a FAS affected child throughout his life. Additional healthcare, education, attention, etc. are factors affecting the cost of a FAS child to their family, private insurers, Health Maintenance Organisations, and the government (6). This disease is completely preventable, yet alcohol exposure is the most common cause for birth defects. Alcohol abuse during and prior to a pregnancy affects the development of the foetus during pregnancy and for the remainder of its life (7).

Employers are affected by this disease with lost productivity costing them about \$66.7 billion per year (2). Lost earnings and decreased wages represent the lower productivity of an alcohol abuser. When workers perform below their

ability level it results in decreased profits.

The government is also affected by this major disorder, paying about \$13.6 billion dollars in damage due to alcohol related accidents, incarcerating alcohol abusers, court costs, crime related costs, etc. They also accept 38.6% of the complete costs of alcohol abuse (2).

Health Maintenance Organisations and private insurers pay 10.2% of alcohol related abuse costs (2). Life insurance policies pay about \$12,000 per death for the approximately 106,600 deaths per year where alcohol is responsible.

Various physical damages are caused and related to alcohol abuse. Alcohol related motor vehicle damage is approximated at \$13.6 billion; this includes vehicle and road damage, court costs, and insurance administration.

Victims of violent and non-violent crimes are affected primarily in the form of lost earnings, the losses are estimated at \$1 billion. Property crime related to alcohol abuse is estimated at \$427 million, this represents lost cash and property. Together alcohol and drug abuse related property crimes, represent 30% of the value of total property crimes.

Approximately 140,000 alcohol related criminals are incarcerated annually, causing a major decrease in productivity. About \$5.4 billion dollars are lost annually due to incarceration of alcohol related criminals; this loss of prospective productivity affects the economy greatly. Although this primarily is a loss to the inmate, it is also a loss to the government and to the society with the loss of potential tax revenue and the cost of keeping the inmate incarcerated, which is approximately \$12,000 per year.

There are many additional disorders that result from alcoholism, which are additional factors in the cost of alcoholism. Depression, as described previously, is one of the major adverse concerns of problematic alcohol abuse.

Treatment

There are many different treatments for alcoholism, from detoxification to drug therapy and counselling. Treatment varies depending upon the length of illness, additional amount of alcohol-related problems, and whether or not the patient really wants to overcome his addiction.

More than 700,000 people receive treatment everyday (8). Patients are either treated on an inpatient or outpatient setting. 13.5% of treated patients receive residential treatment, and 86.5% of patients receive outpatient treatment. The commonly used behavioural treatments are cognitive-behavioural therapy, motivational enhancement therapy, and Alcoholics Anonymous sessions. These treatments have an equal amount of effectiveness, as shown in the Project MATCH trial (9). Often, pharmacotherapy can supplement these treatments. These treatments can be very costly, but when factoring in the damage that a lifetime of problem drinking can cause, treatment appears to be quite a bargain.

Detoxification is the first step of treatment for many patients. It is a form of medically assisted withdrawal from alcohol. Medication is often required to prevent seizures and hypertension. After an extended period of heavy alcohol abuse people usually experience many alcohol withdrawal symptoms. Detoxification is intended to manage the medical and psychological symptoms of alcohol withdrawal. Patients can be treated by detoxification, in either an inpatient or outpatient setting (10). Price varies from centre to centre, but for example, at The Healing Centre in Raleigh, North Carolina, it costs \$261 per day for a detoxification bed, \$200-\$500 per day for emergency services, and \$58 per day for detention services. Treating alcohol-related problems costs society much less than if left untreated.

In the 1980s, alcoholism and other addiction problems were thought of as physical problems, with treatment mainly focused on detoxification. More recent research and a greater knowledge of brain biology have evolved addiction treatment to focus on lifetime abstinence. Long-term programs such as twelve-step and mutual help programs focus on lifetime abstinence and preventing relapse. Alcoholics Anonymous (AA) is one the oldest and most popular of the self-help groups for addicts. Established in 1935 and currently having over 2 million members, AA is clinically proven to reduce problem drinking and relapses and also results in a higher level of social functioning. AA is a very cost-effective treatment; the program is free to those who want to stop drinking. Donations are accepted and appreciated as they are used to off-set costs of meeting places and coffee. After the success of this twelve-step program, many private inpatient treatments have based their treatment on the

ideals of AA (11).

Naltrexone is an opioid antagonist approved by the Food and Drug Administration as an adjunct therapy to be used along with conventional psychosocial therapies for alcohol abuse. Although naltrexone is not a magic answer for alcoholics, as an additional therapy it greatly reduces relapses. The Brown University Center for Alcohol and Addictions Studies recently embarked upon a 5-year study of the effect of naltrexone on heavy social drinkers in their social environment (12). COMBINE is a recent study in progress that combines pharmacological and behavioural therapies for alcohol abuse. The completion of this study will provide researchers in this field with information to treat alcoholic patients more successfully (13).

Review:

Alcohol abuse has been recorded before agriculture was known. In the prehistoric period, people used whatever was available to create a fermented drink. Over the centuries alcohol has evolved from basic ethanol to wine and beer. The use and abuse of these alcoholic beverages began to increase in the 15th century. In London prices were raised on alcoholic beverages to discourage its use. It wasn't until the mid-nineteenth century that chronic alcohol abuse was studied. Some early treatments for alcohol abuse included apomorphine and emetine, which induced vomiting upon the consumption of alcohol. Physicians eventually focused on prophylaxis since positive cures seemed nearly impossible (14).

Current treatment of alcoholism involves private rehabilitation, drug therapy, counselling services, Alcoholics Anonymous, etc. Private rehabilitation has had a large increase since the 1970s, where the number of beds in private rehabilitation facilities quadrupled from 1978-1984. Many private insurance companies and the federal government bear the cost of this treatment, which is approximately \$18,000 per hospital stay. This is a major burden on our healthcare system. It has been found that patients who undergo lengthy inpatient, residential treatments are no better off in overcoming their addiction than those left on their own for treatment. In a study done by George Vaillant, 95% of those treated as an inpatient at an urban hospital had a relapse. In another study done by Helzer *et al.*, findings showed that 93% of the patients at an inner-city

hospital were either dead or still abusing alcohol five to seven years after treatment. Those treated at a private rehabilitation facility are more likely to show better results (15).

The best treatment for alcoholism is one that teaches life skills without alcohol. Programs need to incorporate training in stress management, life skills, social and negotiation skills, job skills, and work habits (15). In addition to these psychological and social treatments, recent drug therapy has produced some positive and productive results. Naltrexone, an opioid antagonist, decreases alcohol consumption by blocking the receptors in the brain that encourage drinking behaviour. Clinical trials done in the early 1990s have shown that naltrexone, in addition to psychosocial treatments, effectively reduces craving and relapse rates in alcoholic patients. It costs approximately \$100/month for the average dosage of 50mg/day. Dosages may be adjusted on an individual basis (12).

What can the pharmacist do?

Depending on the circumstances of pharmacy practice in different countries, there are several avenues open to the pharmacist. The first step in any treatment is problem recognition and the pharmacist may be in a position to notice excessive sales and use of elixirs or other alcohol-containing medicines. The pharmacist may want to discuss this with the patient or a relative of the patient. The pharmacist can promise confidential treatment and service, and have information available for referrals to alcoholism treatment clinics.

Beyond such recognition of the problem, one can assume that an innocent patient question as to the existence of OTC products to help people with "a drinking problem" might be a lead to offer help.

The next task for the pharmacist is that of educator/counsellor and referral agent. The patient needs to know that competent help is available, and where, and what it might involve, and cost. It would be advisable if the pharmacist could ascertain if health insurance may pay for some or all of the fees. A wise pharmacist might attempt to seize the moment by making an appointment for the patient at such a clinic.

Thorough pharmaceutical service calls for the pharmacist to follow-up periodically with the patient, probably by telephone, or in-person, and

for encouragement to be offered while lauding the already completed steps for the patient.

The pharmacist can check that patient's profile in the future to see that medications containing alcohol are avoided. As newer therapies and techniques become known, the pharmacist should take it upon him or herself to stay up-to-date, in

order to offer the best and latest information to their patients.

Perhaps even 80% to 90% of patients will ignore the pharmacist's advice, but the successfully treated 10 to 20% make that activity worthwhile and valuable to all concerned parties.

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