

ALCOHOL AND ITS USE

Ruth C. Engs, Indiana University, Bloomington, IN for Harcourt Brace Jovanovich, 8th grade health textbook 1988 (draft)

NOTE: typos in chapter edited April 2021. Paper manuscripts, drafts, and other material for Dr. Engs can be found in the IUArchives. Finding aid for the collection is available at:

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What is alcohol? How is it made? Why do teenagers drink? How does alcohol effect a person? What kinds of problems does drinking cause? How can you resist pressure to drink?

These are questions teen-agers often ask about alcohol. Alcohol is one of the most commonly used and abused drugs in our society. Among those who drink, one in ten is considered a problem drinker. Because it causes problems for so many people, it is important to learn about alcohol and the immediate and long-term effects of drinking. The decisions you make about drinking can have an effect upon your health now and in the future. Knowing about alcohol can help you make wise decisions about drinking which in turn can aid you to achieve optimum wellness.

Types of alcoholic beverages

There are many different types of alcohols. Many of them are used in medicine and industry. They are very poisonous. Isopropyl alcohol is used to clean the skin before an injection. Methyl alcohol is used as a paint thinner. Both are very poisonous. These alcohols are manufactured by chemical processes. The kind of alcohol found in alcoholic beverages is Ethanol or ethyl alcohol. Beverage alcohol is made by a process called fermentation. In the process of fermentation, water and special yeasts are added to crushed grains or fruit. The yeast acts on the starches in the crushed grain and the sugar in the crushed fruit to produce alcohol and carbon dioxide. Fermentation stops when the alcohol concentration is high enough to kill the yeast or when the starch or sugar is used up.

Beer is made by fermenting the starches in various grains including corn and malt. The

process of making beer is called brewing. In this process of brewing, hops are added to give the beer a bitter flavor. When fermentation stops, the mixture is strained and bottled. The fermentation of sugars from fruits, including grapes, plums and cherries, produces wine. When fermentation stops the mixture is strained and put into wine bottles.

To make liquors a mixture of fermented grain or fruit, called a mash, is distilled. Distillation is the process of boiling a mash, cooling the vapors that boil off from the mash until they turn into liquid, and then collecting the liquid. This liquid contains both alcohol and water. The liquid is then placed in containers, such as oak barrels, and stored for a period of time. Storage allows it to pick up flavors from the containers. When the liquid has the desired flavor it is bottled. Different liquors are made from distilling mashes made from different substances. Rum is made from sugar cane. Vodka is made from potatoes and whiskey is made from corn.

There are different amounts of ethyl alcohol in the different forms of alcoholic beverages. Liquors usually contain about 40% alcohol. Wines contain about 10 to 12 % alcohol and beers about 2 to 6% alcohol. However, in the United States when alcohol is served, a standard glass of beer, wine glass of wine and shot glass of liquor each contain about the same amount of ethanol. About an ounce of alcohol is found in these standard sized drinks.

Why teenagers drink

It is legal to buy and drink alcohol only if you are an adult 21 years of age or older. About 65% of all adults occasionally drink. Some studies have shown that many youths have their first drink outside the home when they are teenagers. However, these drinking teens often get into serious problems from this illegal drinking. These problems include motor vehicle and other accidents, poor school grades, alcoholism, crime and being a victim of crime. Since it is illegal to drink, why do so many teens start drinking before they are of age?

There are many reasons why teenagers illegally drink. Some teenagers drink because they feel if they drink they will be more grown up. Other teens drink because they feel pressured to do so, either by advertising or their friends. Still others use alcohol in an attempt to meet emotional needs such as poor self-esteem or because they feel bored, angry or frustrated.

Pressures from a drinking society

We live in a drinking society. Most adult parties and celebrations include drinking. At parties people appear to be having fun. Some teens drink because they think if they drink they will have a good time. However, drinking to have fun or having a party for the purpose of drinking does not necessarily lead to a good time. Teens who drink to have a good time often

find that the drinking results in hangovers, or problems with their parents or the law. The reason for having a party, such as wanting to visit friends, meeting new people, celebration of a wedding or holiday is what usually results in people having a good time.

Advertisements for alcoholic beverages often suggest that people who drink alcohol feel secure, are adult or sophisticated. In these advertisements, well-dressed people are shown having fun or relaxing after work. The advertisements give the impression that alcohol is a necessary part of these daily activities and a necessary part of being grown up. Teenagers are influenced by these advertisements to begin drinking. Teens who believe that drinking will make them appear more grown up or sophisticated often feel insecure. Drinking does not make a person appear like an adult or feel secure. Making positive and responsible decisions helps make a person an adult and to feel more secure.

Emotional needs

Some teens have problems with their families, friends or teachers. For example, they may feel that their parents do not understand them, or that their friends or teachers do not like them. Problems with family, friends or teachers can result in negative feelings. The negative feelings include loneliness, tension, frustration, anger or boredom. Rather than facing the causes of these feelings and trying to solve the problems, the teen may begin to drink as an escape. The difficulty with this approach is that the problems still remain when the effect of the alcohol wears off. The person may then drink even more in an effort to escape from the feelings and problems. This type of drinking often leads to dependence upon alcohol.

Some teens feel that the only way to have friends and to belong to a group is by drinking. They do not drink because they want to, but because of pressure from their friends. Many teens, who are pressured into drinking so as to belong to a group, feel insecure. If they learned to feel more secure about themselves, they could more easily follow their own judgement.

Some teens begin to drink because they have low self esteem. They think that drinking will make them feel better about themselves. However, after the alcohol has worn off, they still have low self esteem. Other teens find that completing a task, being active in sports, accomplishing hobbies, or helping other people increases self-esteem.

Some teens feel shy and nervous when they are with a group of people or are meeting someone for the first time. To cover up their shyness and to feel more comfortable, they drink. They believe that drinking gives them confidence, although it really causes them to lose judgment and control. Becoming involved with communication skill groups can help the teenager become less shy and nervous when they are with other people.

READING CRITICALLY

1. What is fermentation? How is it important in distilling and brewing?
2. What are the three types of alcoholic drinks? How much alcohol is found in each of them?
3. What are five reasons for illegal drinking among teenagers ?

THINKING CRITICALLY

1. How can people's attitudes influence drinking?
2. Give some examples of problems in a teenagers life that might lead to negative feelings. What are healthy ways of getting rid of negative feelings ?

Immediate Effects of Alcohol Use

Within minutes after alcohol is ingested, it begins to have an effect on the body.

Physical

Alcohol's greatest effect is on the brain. Most people experience a feeling of mild relaxation after they have drunk a small amount of alcohol. Some people think alcohol is a stimulant because after they take a drink they feel and act more lively. Their heart beats faster and their blood pressure increases. However, alcohol is a depressant. People often feel more lively after drinking because alcohol dulls or depresses the part of the brain that controls behavior and judgement.

If they continue to drink, their blood alcohol level will rise and other parts of their brain will begin to feel the effects. They will have problems with muscle coordination. They may have trouble walking or speaking clearly. They may lose their sense of balance, and their vision may become blurred.

The lack of coordination and balance from drinking can cause injury. For example, a person operating a power lawn mower or a hand tool might accidentally become hurt because he or she can not properly control the machine. If a person is working on a ladder or riding a bicycle he or she could fall because of loss of balance.

Reaction time is also slowed when people have drunk several drinks. If they are driving a car they may not be able to step on the breaks fast enough to avoid an accident.

Alcohol can also effect the blood vessels. You may have noticed that some people who have consumed large amounts of alcohol sometimes look red in the face and neck. Alcohol enlarges the blood vessels near the skin, giving a red or flushed appearance. As a result, people may also feel warm.

Intoxication

When people drink so much alcohol that they lose control over their mental and physical abilities, they are said to be drunk, or intoxicated. How much alcohol it takes to become intoxicated varies from person to person. At different times the same person may become intoxicated on different amounts of alcohol. Reasons for this include the amount of food in the stomach, body weight, and illness.

Recovering from intoxication is known as "sobering up". During this time, the liver breaks down the alcohol in the blood. In the average-sized person, it takes about one hour for the liver to break down the amount of alcohol in one drink. Some alcohol is also eliminated by the body through the breath, skin, urine and feces. Nothing can speed up this process.

Intoxication can produce an unpleasant side effect known as a hangover. Symptoms of hangovers include headache, stomach ache, vomiting, and thirst. These symptoms may appear after all of the alcohol in the body has been eliminated. The only cure for a hangover is rest and plenty of water.

Drinking a large amount of alcohol in a short time causes people to become unconscious. This is called a stupor or passing out. Drinking extremely large quantities of alcohol can cause death.

Social

After having several drinks of alcohol people may talk loudly or act silly and foolish. Their ability to think clearly and make sound judgement is impaired. As a result, they may not notice the effect alcohol is having on them and do behaviors that can cause them harm. For example, they may do something foolish like climbing a tree in the middle of the night or do something dangerous such as riding a bicycle fast in the middle of the street. They are more likely to be pressured into doing illegal or dangerous activities by their friends.

Intellectual

People who have had several drinks find it difficult to concentrate. They may also have difficulty in remembering what they have read or learned while they have been drinking.

Emotional

Some people have personality changes when they drink. Very quiet people may start talking loudly and doing things they normally would not do. Happy people may become sad or depressed when they drink. They may begin to cry. Others may become very angry after they have been drinking. They may get into fights.

READING CRITICALLY

1. What is a hangover ?
2. What happens to reaction time and judgement when alcohol is ingested?
3. How does alcohol effect emotions ?

THINKING CRITICALLY

1. Why might it be dangerous for people to drink if they are feeling sad, angry, bored or lonely ?
2. If someone has been drinking why might it be dangerous for them to go swimming, skiing and do other physical activities ?

Long Term Effects of Drinking

When people abuse alcohol for many years various physical social and emotional problems occur. The alcohol can cause physical damage to various body organs. The person can become a problem drinker or alcoholic which results in problems at work, school or at home.

Alcoholism and problem drinking

The long term effect of abusing alcohol is called alcoholism, or problem drinking or alcohol abuse disorder. This condition can affect people of all ages, including teenagers. One in ten people who drinks becomes a problem drinker. There is much debate as to what causes this condition. Some researchers feel it is caused by heredity while others feel it is caused by the home environment. Still others feel it is caused by a mixture of heredity and environmental factors.

Problem drinking can develop over a number of years among some people and in just a few years among others. Problem drinking in adults can occur slowly over a time period of 15 to 20 years. The

person starts to socially drink. As he or she begins to experience stress and problems of living, he or she begins to drink to escape from these problems. However, the stress and problems still remain when the effects of the alcohol wear off. So the person drinks again to escape. It is this pattern of drinking to get rid of problems over a long time which results in problem drinking. However, teenage alcoholics have only been drinking two or three years. The condition appears to develop more quickly among teens and young adults. Teenage problem drinkers begin to drink to escape from problems, to feel good or because they are bored or lonely. As with adults, the problems are still there when the effect of the alcohol wears off. So the teen begins to drink again.

Among teenagers and adults the symptoms of alcoholism are the same. When they continue to drink, they develop a tolerance for alcohol. They need more and more alcohol to feel its effects. When people develop tolerance to alcohol, they often become physically and psychologically dependent upon it. Physical dependence is the need to take regular amounts of alcohol in order for the body to function normally. This is because the alcohol has changed the way the body works.

Psychological dependence is the need to use alcohol to maintain a feeling of well-being. People who have become physically dependent upon alcohol and are not able to get it, will go through withdrawal symptoms. The withdrawal symptoms from alcohol include insomnia, nervousness, rapid pulse rate, high blood pressure and sometimes hallucinations, convulsions and death.

People who become dependent upon alcohol often find they are unable to control or limit the amount of alcohol they drink. This is called loss of control. In loss of control, a person may decide only to have two drinks. However, he or she consumes six drinks even when he or she only wanted to have two. After being intoxicated some problem drinkers experience blackouts. A blackout is a period of time in which the person does not remember what has happened. A blackout is a serious sign that the person is abusing alcohol and that the alcohol is having a negative physical effect on the brain.

Physical

There are many physical health problems resulting from problem drinking. Heavy long term drinking can cause liver and digestive tract disease. A liver severely damaged by alcohol is so scared that it is unable to work properly. The heavy repeated use of alcohol over many years can also damage the lining of the stomach and mouth. This may cause a person to get stomach or mouth cancer. Alcohol can also cause the stomach lining to produce excess acid. This acid can cause open sores and irritate the stomach lining. These open sores are called ulcers and can be very painful. Problem drinking can cause permanent brain damage. A condition called Korsakoff's Psychosis affects memory and causes trembling hands.

For the person who drinks over two drinks a day and smokes there is an increase in heart

disease. Breast cancer is a risk among women who drink heavily. Women who drink heavily during pregnancy have a greater chance of giving birth to deformed and mentally handicapped babies. This is because the alcohol damages the developing the baby in the womb. This condition is called the Fetal Alcohol Syndrome.

Alcoholics sometimes drink so much that they have no desire for nutritious foods. Because the calories in alcohol do not contain the nutrients necessary for good health, some problem drinkers suffer from malnutrition and vitamin B deficiency. This can cause the person to feel weak and to have trembling hands. The alcohol may cause irritation to the digestive system which may also cause poor absorption of food into the body. These physical health problems from long time alcohol abuse can lead to an early death for problem drinkers.

Social

Problem drinkers often experience problems in their relationships at home, with friends and at work. The difficulties of dealing with an alcoholic can cause families to be broken up and friendships to be lost. Problem drinkers can have work or school problems. They frequently cannot work productively. They may sometimes be unable to show up for work and are often late to work or school. This is often because they have hangovers. As a result of their poor work habits, they lose their jobs. Students who become alcoholics frequently drop out of school. Alcoholics often have legal or financial problems. They may be arrested for drunk driving or crime. They are frequently involved in automobile and other accidents. The person with alcoholism can cause problems for many people including his or her children. Children in alcoholic families are sometimes physically or emotionally abused. Physical abuse is where a child is hit or beaten. Emotional abuse is where a child is told he or she is stupid, lazy, or no good. A child who is abused can develop low self esteem, poor school grades and other emotional problems. Children from alcoholic families have a higher chance of becoming problem drinkers themselves.

READING CRITICALLY

1. List five symptoms of problem drinking.
2. Describe "loss of control". Have you ever experienced loss of control over peanuts, potato chips or popcorn ? Describe what happened.
3. Describe at least four serious physical health problems resulting from long time alcohol abuse.

THINKING CRITICALLY

1. What kind of school, job or family problems might a problem drinker experience ?
2. If a teen has a family member with a drinking problem, what can he or she do to avoid getting abused ?
3. Why might a person continue to drink even though his or her family sees that it is causing problems ?

Making Decisions

Making the right decision

Everyone needs to make decision every day. Making the wrong choice can be harmful to your health. Making the right choice can improve wellness. Teens need to make choices about the types of clothes they are going to wear, how much studying they are going to do in the evening, and what they are going to do to relax and have fun. Sometimes it is difficult to decide what the best choice and decision might be. This is because there are many factors that influence making a decision. These factors include pressures from friends, family values and personal feelings.

Teens are often pressured to make choices about drinking by their friends. Drinking is illegal for anyone under twenty-one years of age. Drinking among teenagers can cause accidents and can lead to problem drinking. It is easier to make decisions and to avoid unhealthy choices that can lead to problems, if you have a plan of action. In a plan of action which helps ton make healthy choices the following steps are taken.

1. Identify the problem. If there appears to be many choices or problems, pick one at a time to work on. For example, Susan's friends wanted her to meet them after school to go skating. She promised them she would last week. At breakfast her mother told her that she needed to come home immediately after school as relatives would be visiting. The whole family would be going to dinner and a movie. Susan also had a test the next day which she needed to study for. Susan has three problems. She made a promise to her friends, she made a promise to her mother and she needs to study. She decided first to work to solve the problem with her friends.

2. Identify alternative choices to solve the problem. For all problems there are several choices. For example, Juan's best friends want him to go to the mall with them and to get someone to buy

them beer. In the past the group has gotten into trouble and the security guards have been called. Juan, does not want to go to the mall and drink. However, he is afraid that if he does not go to the mall, his friends might not ask him to do other things.

Juan had several choices. He could go to the mall with his friends. He could go home. He could tell his friends why he does not want to go to the mall with them. He could tell his friends he will not go to the mall, leave to go home and can tell them that if they change their minds they can come to his place and make pizza. He can suggest other alternatives to the mall such as going over to another friends house to play table top pool or to watch T.V. He can suggest other activities such as skating, basketball or stickball.

3. Identify the positive and negative consequences of each choice. In this plan of action step for making choices, you need to ask yourself, "Is the choice likely to hurt or harm me ?

Elisa is at a party with some older friends. The boy who has driven her to the party is drunk. Another boy has offered to drive her home. She does not know him. He has also been drinking but does not appear to be drunk. Her parents told her that if she ever went to a party where there was drinking she would be grounded for a month.

Elisa knows if she drives home with either of the boys, her parents would not know she was at the party. However, she knows she could be harmed if she rode with either boy. If she calls her parents for a ride, she knows she would be safe. However, she would get into trouble with her parents. Elisa asks herself, "what choice is the less harmful to me and my health".

4. Chose the most healthy choice. After all of the choices have been examined, chose the most healthy one. Elisa decides to call her parents to drive her home even though she will not be allowed to go out for a month. She made this choice because she was concerned about her safety if she drove with a person who was drunk or had been drinking.

5. Evaluate the choice. After a choice has been made it is important to see if it was the best choice to solve the problem. A good choice will help you, is healthy and keeps you safe.

Places in the community to find help

Most communities have clinics, counseling services, and other organizations to help problem drinkers and their families. These services are often staffed by people who have had drinking problems in the past. When people are treated for alcoholism, their family members are also treated. There are special treatment centers and services for teenagers with alcohol problems.

Some schools have a student assistance program. This is a program which requires the student, and his or her family, to go to treatment instead of being expelled from school for

drinking. One of the most popular organization in the community which helps problem drinkers is Alcoholics Anonymous or AA. This is an organization with chapters in most communities. AA holds regular meetings that are open to anyone with a present or past drinking problem. During these meetings, people help one another by talking about why they abused alcohol and how AA now helps them.

Al-Anon is an organization that helps families and friends of problem drinkers. It hold meetings to help these people learn to deal with problems that occur in relationships with people with drinking problems. Alateen, helps the teenage children of alcoholics. In Alateen meetings, young people help one another deal with a parent's drinking problem.

Another organization, called Children of Alcoholics is a group in which people who have grown up in problem drinking homes can get support. These groups are often for adults who are not living at home anymore. However, in some communities there are groups for children and teens still living at home with a problem drinker.

Many communities and schools have organizations for teens to become involved with. Many schools now have a chapter of SADD (Students against Drunk driving) or similar local groups which are concerned about teen age drinking. In the SADD, and other local groups, individuals have made the choice not to drink.

As part of these groups, parents and teens develop a contract which is signed by the teen and the parent. In this contract the pupil agrees not to drink. The parent agrees to drive his or her child home from any party if the driver has been drinking. These community groups usually have parties and other activities. If your school does not have this type of group, you might want to help start one with the help of some teachers and parents.

READING CRITICALLY

1. What are the steps in solving problems and making choices ?
2. List three alternative choices you can give to friends who wants you to go someplace that you do not want to go to.
3. List three organizations which can help families who have drinking problems.

THINKING CRITICALLY

1. Why might a plan of action be important for you to help solve any problems ? How can this be used ?

2. What kind of treatment is available in your community for children who have a family member with drinking problems ?

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