

# Lesson 7

## Introduction to Health Determinants

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### Student Resources

Resource	Description
Student Resource 7.1	Analysis: Causation and Correlation
Student Resource 7.2	Reading: Culture as a Health Determinant
Student Resource 7.3	Key Word Notes: Culture as a Health Determinant
Student Resource 7.4	Personal Analysis: Culture as a Health Determinant
Student Resource 7.5	Inventory: Personal Health Determinants
Student Resource 7.6	Analysis: Personal Health Determinants

Student Resource 7.1

# Analysis: Causation and Correlation

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

*Directions: First, read about correlation and causation and be sure you understand the difference. Then check your understanding by answering the questions that follow the reading. If the story is describing correlation, give one hypothesis that could be tested to investigate the issue further. If the story is describing causation, think of one action public health officials could take to help people improve their health. Study the example below before you begin.*

Imagine you read this headline on a news site: “Study shows strong link between fast food and obesity.” What exactly does this mean? Does fast food cause people to become obese? The headline doesn’t tell the whole story. The researchers may have found that fast food consumption over a period of time is correlated, or linked, to obesity, but this doesn’t mean that fast food causes the disease. Obesity is linked to many things, including diet, exercise, and genetics.

## Correlation

Sometimes when we talk about a health determinant that causes a health outcome, what we really mean is a correlation, or an association.

When we say that a health determinant and a health outcome are correlated, we are saying that they have a statistical relationship. In other words, when one thing increases or decreases, the other thing increases or decreases.

Let’s look at obesity as an example. Researchers found that over time when people *increased* their consumption of fast food, the likelihood of them becoming obese also *increased*. That is a *direct* correlation. If a different headline states that researchers have found that when people *increased* their physical activity, the likelihood of those people becoming obese *decreased*, that is an example of an *indirect* correlation.

Examples of Correlation	Correlation Key Phrase	Relationship
There is a relationship between exercise and low stress levels.	“relationship between”	Indirect correlation: increase in exercise, decrease in stress
Pedestrian accidents are less likely to occur in intersections where there are crosswalks.	“less likely”	Indirect correlation: increase in crosswalks, decrease in accidents
Eliminating saturated fat from the diet is associated with a lower risk for heart disease.	“associated with”	Direct correlation: decrease in saturated fat, decrease in risk for heart disease
People who ate unwashed fruit were found to have an increased risk of bacterial infections.	“were found to have”	Direct correlation: increase in unwashed fruit, increase in risk for infection
People who have alcoholic relatives are more likely to develop a problem with alcohol.	“more likely”	Direct correlation: increase in rate of alcoholism in family,

		increase in risk for alcoholism in individual
Bullying is linked to teen suicide.	“linked to”	Direct correlation: increase in bullying, increase in risk for suicide

## Causation

Causation, or saying that something causes something else, is hard to determine. It requires particular types of rigorous research to prove causality.

For example, it may seem like common sense that the more fast food a person eats over time, the more likely it is that the person will struggle with weight issues, but researchers can't say that fast food causes obesity. There are other things to consider. Were the people who ate fast food over a prolonged period of time exercising on a regular basis? Do they have a genetic predisposition to obesity? Did they have other physical problems? Did the work they do require them to be sedentary or active? Did they suffer from mental disorders that affect eating habits, such as depression? To prove causality, researchers must study two controlled groups of people that are similar in every way except for one variable, and that is very difficult to do. Even once causation has been determined, it still could be proven wrong.

### Examples of Causation

Cigarette smoking can cause lung cancer.

Lyme disease is caused by a bacterium called *spirochete* and is spread by ticks.

Drunk driving causes an increase in fatal auto accidents.

The bacterium *Chlamydia trachomatis* causes chlamydia.

The mineral fiber asbestos found in some construction materials can cause lung cancer.

Global health researchers and public health workers make great efforts to distinguish between causation and correlation. In their work, they strive to provide people with information that is as accurate as possible.

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## Example

A recent report released today shows that a group of researchers based in Germany have discovered an association between smoking cigarettes and alcoholism. They found that alcoholics are more likely to smoke than nonalcoholics.

Is the story describing causation or correlation? *correlation*

If it is correlation, write one hypothesis that could be tested to investigate the issue further. If it is causation, write one action that could be taken by public health officials to help people improve their health.

*People who drink too much don't care about their health, so they are more likely to smoke.*

## Story 1

The findings of a report conducted over a period of 10 years show that the risk for cardiovascular disease is partly genetic. The report emphasizes that heart disease is also caused by other factors, including lifestyle choices.

Is the story describing causation or correlation?

If it is correlation, write one hypothesis that could be tested to investigate the issue further. If it is causation, write one action that could be taken by public health officials to help people improve their health.

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## Story 2

According to a new study, people diagnosed with schizophrenia are at risk for using marijuana as a way to self-medicate. The study shows a link between the mental health disorder and marijuana use.

Is the story describing causation or correlation?

If it is correlation, write one hypothesis that could be tested to investigate the issue further. If it is causation, write one action that could be taken by public health officials to help people improve their health.

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## Story 3

Researchers have pinpointed a bacterium that causes pneumonia. It is called *Streptococcus pneumoniae*.

Is the story describing causation or correlation?

If it is correlation, write one hypothesis that could be tested to investigate the issue further. If it is causation, write one action that could be taken by public health officials to help people improve their health.

## Student Resource 7.2

# Reading: Culture as a Health Determinant

## Introduction

What do you eat when you feel sick? When do you know it's time to call a doctor? What are your ideas about what made you sick? The answer to these questions is in large part determined by your culture.

But what exactly is culture? Culture is a difficult thing to pin down. In general, it is the behavior and beliefs that are shared and learned. Culture includes:

- Customs, rituals, and traditions
- Communication and language
- Religion and spirituality
- Art and music
- Relationships
- Food

Defining or understanding culture is difficult. What makes up American culture? A firm handshake? Hamburgers? Jazz?

The United States is a large country spanning several distinct geographical areas and inhabited by millions of people from all over the world. As is the case with most countries, defining American culture involves recognizing and understanding subcultures. There is the culture of the West Coast and the culture of the Deep South. There are religious cultures, such as Jewish American culture, which is very different from, say, the Jewish French culture. There are ethnic and racial cultures, such as African American culture. Of course, there are subcultures within that group, too; the difference between rural and urban African American culture is vast. There is American office culture. There is American sports culture. When you begin to compare colleges, campus culture is one thing you'll consider.

Most of us are part of more than one cultural group. For example, if you are a Mexican American teen, you may identify with American culture, the culture of your high school, and Latino or Hispanic culture.

All of the cultural groups and values that you identify with act as health determinants in different ways. Some cultural values enhance health. For example, cultures that prioritize community often provide individuals with strong support networks. On the other hand, cultural values may not enhance health, such as a cultural practice of giving sugar water to newborns.

## Health Behaviors

There is a relationship between culture and health behaviors. One way to understand this relationship is to look at cultural attitudes about food and weight. In many Pacific Island cultures, larger women are perceived to have an ideal body weight. An excess of weight is seen as a sign of increased fertility. Some of these island nations have a high prevalence of obesity.

In other cultures, women who are underweight are seen as the ideal. Being underweight, like many Western celebrities and models, is seen as a sign of status and wealth. Young women in these cultures are at risk for eating disorders.

In these examples, culture affects health behaviors. In a culture that encourages over- or undereating, individuals' behavior will be affected by these values.

## Perception of Illness

Culture affects people's perception of illness. Different cultural groups have different ideas about what is normal and abnormal health. For example, a rare occurrence of malaria in North America would be

considered alarming. However, in sub-Saharan Africa, malaria is so common that it is considered normal, even though it claims lives.

Culture also affects people's ideas about what causes disease. In India, many people believe that illness occurs when the body is out of balance, when the "hot" and "cold" elements of the body are off-kilter.

Some cultures believe that illness can be caused by an emotion, like envy or fear, or by something supernatural, like offending their deity or being possessed by spirits. In Canada, the First Nations people believe that illness is a sign from the creator that the sick person needs to reevaluate his or her life.

## Health Services

When people choose to use health services is linked to culture. In many cultures, people first turn to home remedies when faced with illness or injury. For example, if you feel a headache and chills, you may first take an aspirin, drink water, and then eat some chicken soup. If your symptoms don't go away in a day or two, you might call the doctor.

In non-Western cultures, home remedies are often used extensively first. This might be due to lack of access to care or because of distrust of medical professionals. Next, a visit with a local healer might take place. A visit with a Western doctor won't happen until the symptoms are severe or even life threatening. It is also common for a combination of modern and traditional medicine to be used at the same time.

## Treatment

Culture affects the choices people make when seeking treatment. People generally seek medical treatment from a provider who belongs to their culture. People want to be treated by someone who speaks their language and respects their customs and beliefs because it is easier to trust someone who understands your way of thinking and handling of health issues. In some cultures, people may avoid seeking treatment from a doctor whom they may need to pay with money. Instead, they may seek treatment from a provider they can barter with or give gifts.

The type of health services providers that people go to for diagnosis and treatment varies among cultures. Here are some examples:

Indigenous Health Service Providers	Western Health Service Providers	Chinese Medical System Health Service Providers
Uncertified midwives	Physicians	Acupuncturists
Shamans	Nurse-midwives	Herbalists
Priests	Dentists	Chemists
Herbalists	Pharmacists	

## A Case Study: Childbirth Mortalities in Ayacucho, Peru

A case study is a written document that describes an individual or a situation (the "case") as an example of a broader topic or issue. They are very useful in global health as well as in all of the health sciences.

One significant challenge for global health workers is to find ways to respect people's culture while implementing solutions that improve health outcomes. They work to resolve health issues without disrupting cultural norms. Below is a case study about childbirth and neonatal mortality in an impoverished region of Peru. In this case, an NGO worked with the local population to improve outcomes in childbirth. This case study illustrates an example of workers who respected the local culture while

resolving a major health issue. In this region of Peru called Ayacucho, the maternal mortality rate was 300 per 100,000 live births, compared with a rate of 50 per 100,000 live births in other parts of the country closer to the capital of Lima. In Ayacucho, poverty is extreme, educational levels are low, and illiteracy is widespread, especially among women. This region was populated mostly by indigenous peoples who generally did not trust Western health professionals. One NGO was determined to find a way to reduce the maternal mortality rate while still respecting local customs.

NGO workers invited tribal leaders, pregnant women, and traditional birth attendants to meet with health professionals. The challenge was to design a delivery room that would provide up-to-date medical care while also honoring Ayacucho tradition.

In the process of designing the delivery room, the health professionals and the traditional birth attendants trained each other. The health professionals taught the traditional attendants about newborn care and signs of danger during delivery, while the attendants taught the health professionals about their cultural birth practices and medications. The health professionals also studied the local dialect so that women giving birth could be addressed in their native language.

As a result of this work in Ayacucho, more women began to use the new delivery room. In 1999, only 3% of births took place in the health center. But by 2007, 83% of births took place there. Women who used the center reported that they felt more comfortable in the environment and would choose to use the center again for future births. The NGO had succeeded in respecting the local culture while achieving an improved health outcome for the women and their children.

Data retrieved March 2014 from: <http://www.who.int/bulletin/volumes/87/9/08-057794/en/>

Student Resource 7.3

# Key Word Notes: Culture as a Health Determinant

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

*Directions: Read Student Resource 7.2, Reading: Culture as a Health Determinant. For each section of the reading, write down three or four terms that you think are key words, or words that can help you remember the most important point(s) of that section. When you have finished the reading, use your key words to write a summary of what you learned from the reading.*

Introduction	Health Behaviors	Perception of Illness
Health Services	Treatment	A Case Study

Summary (two or three sentences):

Student Resource 7.4

# Personal Analysis: Culture as a Health Determinant

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Directions: Complete this resource to look at the ways that your culture determines your health.

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## Cultures You Identify With

Most people identify with more than one cultural group. List two to four cultural groups that you identify with. Then underline the cultural group that you would like to focus on.

- 1.
- 2.
- 3.
- 4.

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## Elements That Make Up Your Culture

Think about some of the elements that make up the culture you underlined. Fill in the chart with your ideas.

What customs and rituals are parts of the culture?	
What recreational activities are parts of the culture?	
Are religious beliefs a part of the culture? Explain.	
What language(s) do people in the culture speak?	

How are art and music a part of the culture?	
What are the cultural beliefs about relationships, family, and community?	
What distinguishing types of food are eaten in the culture?	

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## Examples of Your Culture as a Health Determinant

Give two examples of how the culture affects your health behaviors. First give one example about how the culture enhances your health behavior, and then give one example about how the culture does not. Next, explain one way that you could address the negative health behavior while still respecting your culture. Examples are shown.

Positive Health Behavior Example	Negative Health Behavior Example	One Way to Address Negative Behavior
<i>In my culture, there is an emphasis on team sports, so I've been athletic from a young age. I get plenty of physical activity.</i>	<i>People in my culture encourage overeating. They push seconds—or even thirds—on the young people. I worry that I'm going to be overweight like my relatives when I get older.</i>	<i>I can still enjoy the wonderful, festive family meals with people from my culture but politely refuse more food. I can explain that I'm full and that I'll eat more later if I feel hungry.</i>

### Student Resource 7.5

# Inventory: Personal Health Determinants

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

*Directions: Use this resource to identify health determinants that apply to your community, your family, and yourself. It is divided into three sections:*

1. *Socioeconomic, Environmental, and Geographic Health Determinants*
2. *Social and Cultural Health Determinants*
3. *Behavioral, Biological, and Medical Health Determinants*

*Each section has some questions to help you determine which health determinants affect your community, your family, and you. Use this information to fill in the chart that follows each set of questions. An example of a health determinant is given in each chart. You don't need to write answers to the questions; they are designed to help you think carefully about health determinants. Remember too that you learned about health determinants in your community in the beginning of this lesson.*

## Socioeconomic, Environmental, and Geographic Health Determinants

- Education and Employment
  - Is there a high level of unemployment in your community? Do the adults in your family have stable and fulfilling work?
  - Do young people in your community need to work to make a family financial contribution?
  - Are work-related issues a source of stress?
  - Do people typically receive health insurance through their work?
  - How has the level of education affected the employment opportunities for people in your family and community? Has a lack of education prevented people from obtaining employment?
  - What workplace dangers do people face? Do people do sedentary work, like office jobs? Do they do work that is physically taxing, like farm work? Are they exposed to dangerous chemicals or conditions at work?
- Health Services
  - Do you, your family, and people in your community have access to quality health services? Is there anything holding people back from accessing health services?
  - Are there specific types of health services, such as dental care, that aren't accessible or affordable?
  - Do people seek preventive care or do they typically wait until a problem develops before seeking care?
- Physical Environment
  - Is there violence in your home or community? How does the violence affect people?
  - Do people in your family and community have safe housing?
  - Is there clean drinking water and excellent sanitation?
  - Are there places to get healthy, affordable food?

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- Are there clean and safe places to exercise and play?
- Do people use public transportation? Is it affordable, reliable, and safe?
- Geography
  - Is there air, water, or soil pollution where people live and work?
  - Do you live in an area that has extreme climates, either really cold or really hot, that put people at risk for conditions like frostbite, hypothermia, or heat exhaustion?
  - Do certain insects thrive in the area where you live, putting people at risk for diseases like malaria or West Nile virus?

<b>Health Determinants Common to Most People in My Community</b>	<b>Health Determinants Common to Most People in My Family</b>	<b>Health Determinants that Affect Me Specifically</b>
<i>Most people in my community have a relative who has a chronic respiratory condition from working in the paint factory.</i>		

## Social and Cultural Health Determinants

- Support Networks
  - Are there strong support networks, such as community centers, clubs, or church groups, that help people develop healthy coping skills and encourage people to make healthy choices?
  - Are elderly people looked after in your community?
  - Are there good infant and day-care options in your community?
  - Are there good afterschool programs for school-aged children and teens?
- Cultural Beliefs
  - Does your culture enhance people’s health behavior?
  - Is healthy eating and physical activity part of your culture?
  - What is your culture’s perception of illness?
- Discrimination
  - Are people discriminated against because of their sexual orientation? Do gay people feel safe in your community?
  - Is racism a problem in your community? Are certain racial groups discriminated against? Is there racial violence?

Health Determinants Common to Most People in My Community	Health Determinants Common to Most People in My Family	Health Determinants that Affect Me Specifically
	<p><i>Most people in my family believe that you should keep your problems to yourself.</i></p>	

## Behavioral, Biological, and Medical Health Determinants

- Personal Behavior
  - Do you make healthy food and drink choices?
  - Are you physically active?
  - Do you make healthy choices about smoking, drinking, and using drugs?
  - Do you feel informed about how to protect yourself from sexually transmitted diseases and unwanted pregnancy?
- Genetics
  - Do people in your family typically have a long life span? What is the general level of health for people in your family?
  - Are you at risk for developing certain diseases or conditions that have a genetic correlation, like alcoholism or heart disease? Are you knowledgeable about your family's medical history?
  - What is your general health like? Do you have any chronic illness?
- Gender
  - Are there some conditions or health-related issues that are more common to your gender? Do you feel informed about those issues?

Health Determinants Common to Most People in My Community	Health Determinants Common to Most People in My Family	Health Determinants that Affect Me Specifically
		<p><i>I am a vegetarian and carefully plan my diet to be healthy and balanced.</i></p>

Student Resource 7.6

## Analysis: Personal Health Determinants

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

*Directions: Use Student Resource 7.5, Inventory: Personal Health Determinants, to help you write an analysis of the health determinants that affect you, your family, and your community. An example is provided. Before you begin, read through all of the instructions on this sheet, and read the assessment criteria at the end to make sure you understand how your work will be assessed.*

Remember that health determinants don't need to be bad or things that cause health to suffer. For example, perhaps you live in a place that has safe drinking water, and there is little or no pollution in the air and soil. This geographic health determinant is going to have a positive health outcome on you and people in your community.

Your analysis should include information on the following topics:

- Introduction (Give a brief explanation of who you are and where you live.)
- One paragraph about socioeconomic, environmental, and geographic determinants
- One paragraph about social and cultural determinants
- One paragraph about behavioral, biological, and medical determinants
- Conclusion (Summarize what effect the determinants have on your health.)

Before you begin writing, create an outline, using the model below. Include in the outline the information that you are going to use in each section of your analysis. When you have completed the outline, begin writing. Remember to make sure that your analysis meets or exceeds the assessment criteria.

I. Introduction

II. Socioeconomic, Environmental, and Geographic Determinants

III. Social and Cultural Determinants

IV. Behavioral, Biological, and Medical Health Determinants

## V. Conclusion

### Make sure your assignment meets or exceeds the following assessment criteria:

- The introduction clearly describes who and what are being studied, and the conclusion clearly summarizes the effect of the determinants on the subject's health.
- The analysis accurately identifies socioeconomic, environmental, and geographic determinants that are impacting individual health, family health, and/or the health of the community.
- The analysis accurately identifies social and cultural determinants that are impacting individual health, family health, and/or the health of the community.
- The analysis accurately identifies behavioral, biological, and medical determinants that are impacting individual health, family health, and/or the health of the community.
- The analysis accurately pinpoints how determinants can interact, or influence each other, to impact health.
- The completed assignment is neat and uses proper spelling and grammar.

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## Example Analysis

I am a 14-year-old boy living in a Texas suburb. Many people in my community work for a nearby university, so the economy in our town is stable and the quality of life is pretty good. I live with my mother, my older sister, and my baby niece.

My father died of a heart attack when I was young. Since then, my mother has worked very hard as a housecleaner to provide for our family. Many families in our town need housecleaners, so my mother always has plenty of work. Because of her work, her back hurts a lot. The doctor calls it "chronic back pain." Another problem is that we don't have health insurance. When we need to see a doctor, we go to a clinic, but we only go if we're really sick. Until she had a baby, my older sister also worked. Now she stays home. I've wanted to work, but my mother wants me to focus on school. I feel pressure to succeed.

We live in a community with clean air and clean drinking water. The climate is the geographical determinant that has the greatest impact on us. Summers are blistering hot. When my sister was pregnant, she had heat stroke and had to go to the hospital.

We belong to an active church. After my father died, members gave us a lot of support. They brought food and offered to do repairs around the house. They were very supportive. However, one of the church's beliefs is that young people should not be taught about birth control. My sister was uneducated when she had an unplanned pregnancy. Her pregnancy gave my family a lot of stress. But the church stepped in again and helped my sister learn how to take care of the baby while my mom worked.

Some kids at my high school drink beer and smoke cigarettes and pot. My friends and I don't hang out with them. We play softball, go fishing, and listen to new bands that we find on the Internet. Some people at my church smoke. My father was a smoker. But now no one in my family drinks, smokes, or uses drugs. Smoking might be one factor that caused my father's heart attack, so I am not going to smoke.

Overall, I am in good health. My mother and sister are overweight and that's bad for their health. I am going to watch my weight. I don't drink a lot of soda. I know that being active and not eating junk food will help keep me healthy in the long run. Having no health insurance could have a bad impact if my mother's back pain gets worse or my sister or niece gets really sick. Sometimes my life is stressful, but I have my family and friends to help me deal with things.