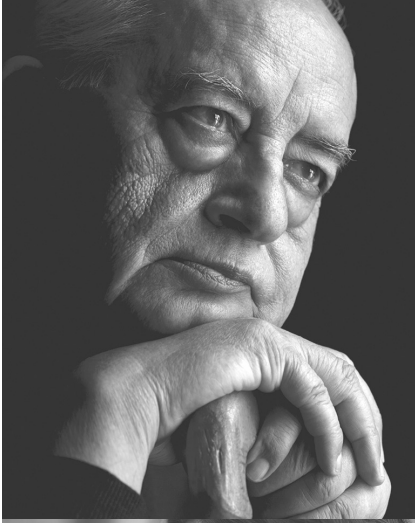

PART I

Fundamentals of Health Disparities

"Today the fate of humankind is even more crucially linked than ever before. The boundaries between the problems of 'others' and 'our' problems are being increasingly erased."

—**Janez Drnovŝek**, past president of Slovenia, 59th Session of the General Assembly of the United Nations, September 21, 2004

CHAPTER 1

Health Disparities: The Best of Times, the Worst of Times

"It was the best of times, it was the worst of times. . . ."

—**Charles Dickens** (1812-1870), author of A Tale of Two Cities

LEARNING OBJECTIVES

After completing this chapter, each learner will be able to:

- Summarize and critique the thesis that with regard to current health outcomes, the United States can be described within the framework of the present being the "best of times and the worst of times."
- Describe how the concept of health and health disparities extends beyond the area of health care and into the realms of history, sociology, philosophy, and other disciplines.
- Describe the historical circumstances that have shaped the emergence of health disparities.
- Define contemporary *tribalism,* and explore how the concept suggests the need for novel approaches to the field of health disparities.

The Status of Humankind

Several famous lines from Charles Dickens' classic novel, *A Tale of Two Cities* (1859), are often used to denote the contradictory forces that simultaneously operate in any given historical period. In introducing a complex fictional plot regarding the prelude to the French Revolution, Dickens writes:

> It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of

> Darkness, it was the spring of hope, it
> was the winter of despair. . . .

These much-quoted lines are extremely applicable to the present.

By virtually any measure of progress, for the whole of humankind, this is the "best of times." **BOX 1.1** lists a few reasons why this statement is true. Additional data can be cited to demonstrate that, when viewed as a whole, the present is indeed the "best of times" for humans worldwide.

However, as one considers these words, it becomes clear that they also can be applied to efforts to engage in dialogue regarding current inequalities in health outcomes within the United States. The contradictory nature of the health status of Americans becomes immediately apparent when one examines life expectancy. Yes, life expectancies have increased for all of humankind. However, dramatic differences in life expectancy exist between various subgroups by race/ethnicity, sex, geographic area, sexual preference, income and education, or other groupings. Indeed, those variations are so severe that residents of Hong Kong have a life expectancy that is multiple decades higher than the citizens of Chad (CIA. World Factbook, 2017). Similarly, persons who live in Summit County, Colorado (86.83 years), have a life expectancy that is more than two decades longer than persons who live in Oglala Lakota County, South Dakota (66.8 years) (Institute for Health Metrics and Evaluation, 2017).

Over recent years, citations regarding inequalities such as these appear to have masked the tremendous growth in life expectancy that has occurred across all groups. However, life expectancy is not at the highest level in American history (e.g., the life

BOX 1.1 Why It Is the "Best of Times" for Humanity

- Both males and females worldwide are, on average, taller and heavier than at any other time in their approximately 1.8 to 2 million years on Earth as Homo ancestral and modern species (Will, Pablos, & Stock, 2017). These changes have occurred due to improvements in nutrition and health care, increased food availability and access, and the emergence of new technologies. Greater height and weight support the survival of humankind (University of Cambridge, 2017).
- Humans are living longer and, as a result, are able to improve the human condition through greater social, economic, and intellectual capital. Mean life expectancy at birth for people *in the world* as a whole has increased from 50 years in 1960 to approximately 71.5 years in 2015 (Zijdeman & da Silva, 2015).
- Humans have access to more technology than at any other point in history, and they use this technology to improve the human condition. Internet World Statistics (2017) estimated that as of June 2017, 51.7% of the world's population was able to use the Internet. Global communication strengthens the ability of humankind to share information to support survival and growth.
- Although it remains a problem, extreme global poverty has decreased, thereby allowing more of humankind to improve their condition in life. Roser and Ortiz-Ospina (2018) argue that increased access to material goods has been accompanied by improvements in health and education.
- According to Roser (2017), on average, deaths from violence have decreased over the history of humankind.

Internet World Statistics. (2017). Internet growth statistics: Today's road to e-commerce and global trade. Retrieved from www.internet.worldstats.com; Roser, M. (2017). Ethnographic and archaeological evidence on violent deaths. Our World in Data. Retrieved from https://ourworldindata.org/ethnographic-and-archaeological-evidence-on-violent-deaths; Roser, R., & Ortiz-Ospina, E. (2018). Global extreme poverty. Our World in Data. Retrieved from https://ourworlddata.org./extreme-poverty/; University of Cambridge (2017, November). Height and weight evolved at different speeds in the bodies of our ancestors. *Science Daily*. Retrieved from https://www.sciencedaily.com/releases/2017/11/10171108092241.htm; Will, M., Pablos, A., & Stock, J. T. (2017). Long-term patterns of body mass and stature evolution within the hominin lineage. *Royal Society Open Science*, *4*. doi: 10.1098/rsos.171339; Zijdeman, R., & Ribeiro da Silva, F. (2015). Life expectancy at birth (total). CLIO-INFRA UP TO 1949; UN Population Division for 1950 to 2015. IISH Dataverse. V1. Retrieved from http://hdl.handle.net/10622/LKYT53

expectancy of non-Hispanic white populations, dropped by 1 month from 2013 to 2014) (Arias, 2016). Yes, inequalities in life expectancies are abundant. Yet, drastic increases in life expectancy in the United States occurred from 1900 to 2015. **TABLE 1.1** provides data on the increases in life expectancy at birth for White and African American males and females for selected years from 1900 to 2014 (National Center for Health Statistics, 2017). As the data reveal, every single group listed has gained more than 30 additional years of life over this time period. Although data on life expectancy are not presented for all subgroups, Table 1.1 reveals that despite subgroup inequalities in life expectancy, it is literally the "best of times" in that people in the United States are now living much longer than in the distant past.

But, those who choose to view the present as the worst of times can also support their claim. For example, although Americans are no longer plagued by many of the infectious diseases that threatened the length of life in earlier historical periods, preferences for high-calorie foods and a sedentary lifestyle have elevated the prevalence and incidence of chronic illnesses such as obesity, diabetes mellitus, stroke, and heart disease.

The applicability of Dickens' paradigm of the contradictory is also observable in the fact that America's various subgroups have achieved legislated "freedoms" that were nonexistent during earlier periods. Free African American communities, working in partnership with advocates for humankind that spanned race/ethnicity, gender, and nationality (LaRoche, 2014), sought to address systemic inequalities as part of the underground railroad. Likewise, women suffrage leaders throughout the nineteenth century were also supported and assisted by males such as California's Aaron Sargent, a state senator, and others. Sexual minorities (Katz-Wise, Reisner, White et al., 2016), collectives of individuals in support of religious freedom (Curtis, 2016), and others have, over decades and centuries, generated an era of mature change that has resulted in new laws, regulations, and initiatives. Yet, in the present, tensions and subgroup loyalties appear to be subordinating a commitment to the common good as individuals and groups choose to primarily engage in dialogues about differences.

Again, however, data and research reveal another portrait. The United States, often described as a "melting pot of nations" (McDonald, 2007), is closer to an achievement of this

TABLE 1.1 Life Expectancy at Birth by Race and Sex: 1900, 1950, 2000, 2015

	White		African American	
Year	**Males**	**Females**	**Males**	**Females**
1900	46.6	48.7	32.5	33.5
1950	66.5	72.2	59.1	62.9
2000	74.7	79.9	68.2	75.1
2015	76.6	81.3	72.2	78.5

National Center for Health Statistics. (2017). Health, United States, 2016: With chartbook on long-term trends in health. Table 15, Life expectancy at birth (years), at age 65, and at age 75, by sex, race, and Hispanic origin, selected years 1900–2015, pp.116-7. Hyattsville, MD: NCHS.

status than ever before. In 1900, the American population included the descendants of Irish Catholics who had sought refuge from the ravages of famine beginning in the 1840s. It also included immigrants from Scandinavia, Germany, Spain, Italy, the Netherlands, Greece, Russia, and other countries from throughout Europe. As a result, approximately 66.8 million, or 88%, of the country's 75.9 million residents were of European descent (Gibson & Jung, 2002).

Today, the demographic composition of the United States is much different. According to the U.S. Bureau of the Census Population Clock, 327,591,527 persons lived in the United States as of April 22, 2018. One birth occurred every 8 seconds; one death every 11 seconds, and one immigrant, often from a different continent, entered the country every 28 seconds. With every 14-second interval of the Population Clock, there is a net gain in population of one resident. Today, persons of European descent alone who are not Hispanic or Latino now comprise 61.3% of the U.S. population (U.S. Census Bureau, 2017). **TABLE 1.2** provides a breakdown of the race/ethnicity of the population to whom healthcare administrators, public health professionals, physicians, nurses, allied health professionals, hospitals, laboratories, managed care and traditional insurance providers, long-term care facilities, the mental and behavioral healthcare infrastructure, dialysis centers, and other components of the health system deliver services to in the United States today.

While evidence exists that it is the "best of times" relative to life expectancy, a number of social indicators that affect health care also support this claim. The percentage of the U.S. population who are high school graduates is 87.0%—a historical high. Approximately 30.3% of U.S. residents have a college degree. As of 2016, the proportion of persons in poverty was 12.7%, a decrease from 14.8% in 2013 (U.S. Census Bureau, 2016). Indeed, as one reviews data across subgroups, it becomes clear that, on average, all American subgroups have achieved some share of the highly sought after "American Dream." Nevertheless, the very concept of health disparities stimulates sentiments of division, images of one subgroup competing with another for scarce health resources, and a psychic and emotional uneasiness that can best be described as*contemporary subtribalism*.

TABLE 1.2 U.S. Population by Race/Ethnicity: 2016

Race/Ethnicity	% of U.S. Population
White alone, non-Hispanic or Latino	61.3
Hispanic/Latino	17.8
African American	13.3
Two or more races	2.6
Native Hawaiian and other Pacific Islander	0.2
American Indian and Alaskan Native	1.3
Asians alone	5.7
Foreign-born	13.2

U.S. Census Bureau. (2016). American FactFinder. Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States, States and Counties: April 2010 to July 2016, 2016 Population Estimates. https://www.census.gov/data/tables/2017/demo/popest/nation-detail.html

Contemporary Subtribalism

Under all circumstances, planning, organizing, directing, and assessing the delivery of healthcare services to diverse groups is far

from simple. However, the administration of healthcare services has become even more complex because of underlying tensions that exist between subgroups. The concepts of *contemporary tribalism* and *contemporary subtribalism* provide a framework that can aid in understanding these emerging and growing tensions.

In developing an understanding of the concept of contemporary subtribalism, it is necessary to first ask, "What is a tribe?" Anthropologists' definitions of tribes have now been standardized in the English language through their inclusion in various dictionaries. The following are some definitions of **tribe** found in popular dictionaries:

- "A social group comprising numerous families, clans, or generations together with slaves, dependents, or adopted strangers" (*Merriam-Webster Dictionary*, n.d.).
- "A group of people that includes many families and relatives who have the same language, customs, and beliefs" (*Merriam-Webster Learners Dictionary*, n.d.).
- "A group of people, or a community with similar values or interests, a group with a common ancestor, or a common leader" (YourDictionary, n.d.).
- "A group of people, often of related families, who live together, sharing the same language, culture, and history, especially those who do not live in towns or cities" (*Cambridge Dictionary*, n.d.).
- "A large group of related families who live in the same area and share a common language, religion, and customs" (*Macmillan Dictionary*, n.d.).
- "A unit of sociopolitical organization consisting of a number of families, clans, or other groups who share a common ancestry and culture and among whom leadership is typically neither formalized nor permanent" (The Free Dictionary, n.d.).
- "A social division in a traditional society consisting of families or communities linked by social, economic, religious, or blood ties, with a common culture and dialect, typically having a recognized leader"; "A distinctive close-knit group" (derogatory); "A social division of (usually preliterate) people" (*Oxford Living Dictionary*, n.d.).
- "A traditional social group of people. Most tribes have existed much longer than existing states and countries" (Vocabulary.com, n.d.).
- "A group of people, or a community with similar values or interests, a group with a common ancestor, or a common leader" (*American Sign Language Dictionary*, n.d.).
- "A group of people who are linked by physical and societal factors such as place of residency or birth, ancestry, culture and customs, religious beliefs, economics, blood relations, common language, or other social constructs, who may or may not have a common ancestor or common leader" (*The Authors*).

The term **subtribe** can be defined as a subset of a larger tribe. In applying this terminology, the term seeks to bypass rather than support anthropological arguments regarding colonialism versus indigenous peoples (Robertson, 2016). Rather, this language is applied as a reference to subgroup loyalties that can mask the needs of the larger society and subordinate them to the interests of the subgroup. To distinguish the use of the word *subtribe*, the term *contemporary subtribalism* has been coined.

Contemporary subtribalism is defined as the emergence of values, beliefs, and attitudes that develop in defense and protection of any subgroup, (whether defined by race/ethnicity, sex, sexual preference, religion, geographic area, occupation, and/or any other grouping) when such feelings of loyalty become so intense as to mask solutions and strategies that generate win-win outcomes for all subgroups. This definition comprises the approach that frames the

entirety of this text; that is, the data introduced, the research presented, and the strategies recommended are designed to introduce healthcare administrators, public health professionals, clinicians, researchers, policy makers, and consumers to win-win health disparity approaches that are mutually beneficial to each of the subgroups being served.

Contemporary subtribes compete for resources in general, including healthcare resources. When shifts in the number, nature, and socioeconomic and political power of contemporary subtribes occur, a redistribution of healthcare resources takes place. Healthcare administrators, public health professionals, and clinicians can play the role of a mediator by ensuring that the healthcare services provided by the institutions that they lead are not aligned in such a way that they provide more resources to any of these competing and oftentimes conflicting groups at the expense of other groups. Healthcare administrators and other influencers must be able to rise above contemporary subtribalism and understand that cooperation and accommodation are the tools of social interaction that will achieve a win-win solution for all people. In order to deliver optimal services, healthcare administrators, public health professionals, and clinicians must thoroughly understand the magnitude, causes, and remedies for disparities in those areas of the healthcare system that fall under their leadership.

This task is, however, made extremely difficult because subtribal differences also exist in the distribution of other, non-healthcare-related resources. Differences in the distribution of societal resources exist by race/ethnicity and sex. Within these subtribes, additional subtribes can be identified based on age, geographic area, socioeconomic status, religion and rates of religious participation, education and educational access, sexual preference and gender identification, and even by the distribution of the various types of intelligences that have been identified as characteristic of humankind (Gardner, 1993). These subtribes oftentimes see each other as the enemy and stand poised to file lawsuits against healthcare institutions whose administrators allow persistent *preventable* disparities to characterize the services provided when patterned differences across such subgroups can be documented.

In some respects, the first subtribe into which humans are divided is the region of the world in which they live. Individuals self-describe, and often are described by others, as European, Asian, South American, African, and so on. Accordingly, one may first approach health disparities by comparing the status of people based on the geographic region where they were born.

Disparities by Geographic Region: The First Subtribes of Humankind

The land on planet Earth is currently divided into 195+ geopolitical areas many of which have been labeled as *countries*. (Note, however, that some geographic areas are, for a number of reasons, not included within the term *country* as currently defined by the United Nations, the U.S. Department of State, and other authorities.) **TABLE 1.3** lists the world's populations according to each geographic region. **FIGURE 1.1** shows a map of these regions.

When the population that resides in each of these regions is aggregated, it reveals that approximately 7.5 billion persons now inhabit the earth (World Population Review, 2017). **FIGURE 1.2** shows the world population distribution by region as of 2017.

TABLE 1.4 breaks down by region the **gross domestic product (GDP) per capita**, an economic concept that is used to measure amount of dollars each resident would have based on the market value of all goods and services produced in that region.

As Table 1.4 indicates, significant differences exist in per capita wealth by region. As

TABLE 1.3 World Population Distribution by Region

Region	Number of Countries	% of Global Population
North America	2	4.8
Latin America and the Caribbean	33	8.6
Oceania	14	0.5
Europe	44	9.8
Asia	48	59.7
Africa	54	16.6

Constructed by authors from data found in the United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects 2017 – Data Booklet (ST/ESA/SER.A/401).

FIGURE 1.1 Six world regions.

Map Source: Created by authors with mapchart.net.

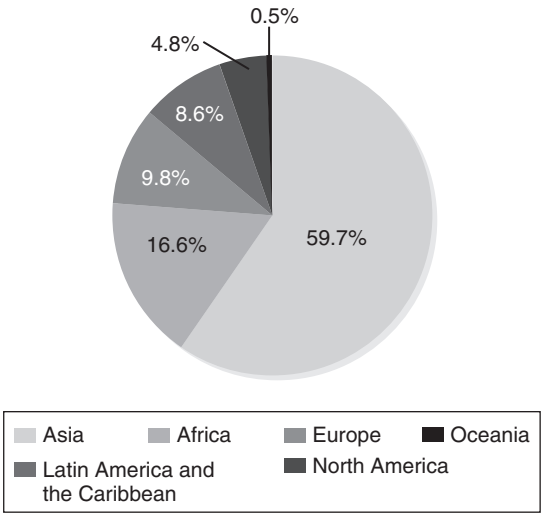

FIGURE 1.2 World population by region: 2017.

Constructed by authors with data found from United Nations, World Population Prospects 2017.

TABLE 1.4 Gross Domestic Product (GDP) per Capita by Region, 2016

Region	GDP per Capita (U.S. dollars)	% of Difference
World average	$10,300	Reference
North America	$37,477	+263.85
Oceania	$35,087	+240.65
Europe	$25,851	+150.98
Latin America and the Caribbean	$8,520	–17.28
Asia	$5,635	–45.29
Africa	$1,809	–82.43

Data from World Atlas (2017). The continents of the world per capita GDP. These data were accessed by the authors on December 16, 2017.

indicated, the mean per capita GDP across all regions was $10,300 in 2016 (the latest date for which data were available at the time of each country's output) (World Atlas, 2017). However, individuals living in North America had a GDP that was 263.85% higher than the world's mean per capita GDP of $10,300. Oceania, which includes Australia, Guam, New Zealand, the Fiji Islands, and other areas, had a per capita income that was 240.65% higher. Europe had a GDP per capita that was 150.98% higher than the world average. Latin America and the Caribbean's GDP was 17.28% lower than the global mean. Asia's wealth per person was 45.29% lower than

BOX 1.2 A Sample of Differences in the Key Regions of the World by Distribution of Natural Resources

North America's Natural Resources

- The third largest land area, North America, includes highly fertile soil, an abundance of fresh water and forest, a range of climates which contribute to a varied ecosystem that allows a multitude of agricultural products to be provided, and other resources.
- The natural resources also include coal, iron, copper, gold, silver, and other resources.

Oceania

- This area includes gold, natural gas, copper, coal, iron ore, forests, uranium, and others.
- The land mass of Oceania is primarily underwater.

Europe

- This area has resources of oil, natural gas, gold, bauxite, natural gas, timber, zinc, and others.
- This is the second smallest land mass next to Australia.

Latin America and the Caribbean

- This region, with the fourth largest land mass, has some oil and natural gas deposits, rivers that can be navigated, a temperate climate with regular waterfalls that supports food production, forests, waterways for fishing, cork, freshwater, chromium, titanium, lead, minerals, and other resources.

Asia

- This region has the largest land mass of all regions. This land mass supports water, petroleum, fish, forests, natural gas, timber, tin, zinc, nickel, copper, and other resources.

Africa

- This region has the second largest land mass and has, according to some analysts, the largest supply of natural resources worldwide including gold, silver, petroleum, uranium, silver, diamonds, oil, gas, timber, and others.

Date from the Central Intelligence Agency, The World Factbook, 2017/2018. https://www.cia/.gov, accessed April 21, 2018.

the world average, and Africa's mean GDP per capita was 82.34% lower.

Why do the described differences in GDP per capita exist by region?

One of the earliest theorists to investigate differences in income and wealth across nations was the economist Adam Smith (1776). Adam Smith argued that the production, allocation, and distribution of goods and services through an institutional mechanism that allows each individual to make buying and selling decisions based upon their own self-interest would ultimately generate the greatest gross domestic product.

While the institutional mechanism used to make economic decisions is important, other researchers have identified a much broader range of variables that can "explain" the described differences in total and per capita income between the described regions. First, each region differs in natural resources. **BOX 1.2** lists a few of these differences.

Resources alone, however, do not create differences in the gross domestic product of countries. Kruss, McGarth, Petersen, and Gastrow (2015) emphasize the highly critical role of education in general and higher education in particular. Sulaiman, Bala, Tijani et al., (2015) report on has similar findings. However, Suizzero and Tisdell (2016) assess theories that argue that the contemporary wealth of a region is actually traceable to the early development of humankind in various regions. Stated differently, some anthropologists suggest that the early development of tools and the timing of the shift away from hunting and gathering in a society also created a developmental

TABLE 1.5 Differences in Mean Life Expectancy at Birth by Gender and Region, 2015

World Region	Life Expectancy - Female	% of Difference	Life Expectancy - Male	% of Difference
All regions	73.8	Reference	69.2	Reference
Africa	63.2	−14.36	59.8	−13.58
Asia	74.4	+0.81	70.5	+1.88
Europe	81.1	+9.89	74.3	+7.37
Latin America and the Caribbean	78.5	+6.37	71.9	+3.90
North America	81.8	+10.84	77.2	+11.56
Oceania	80.6	+9.21	76.2	+10.12

Data from 2015 found at the United Nations. Department of Economic and Social Affairs. Population Division 2017. Annex Table A1 – Selected mortality indicators in 2015. Life expectancy at birth (years) World Mortality 2017: Data Booklet, pp. 10-18, New York: United Nations. Accessed from http://www.un.org/en/development/desa/population/publications/mortality/world-mortality-cdrom-2017.shtml

chain that is still reflected in contemporary differentials in income and wealth by region. Whether these theorists are or are not accurate, a large body of research suggests that the described differences in per capita income across regions reflect a complex assortment of cultural, anthropological, economic, physical, and other psychological factors.

Is there a relationship between income or wealth inequality and health?

Existing research confirms that people living in those regions with greater income and wealth also have better health. This relationship is so significant that a now classic study by Byrne (2003) is entitled "Health Equals Wealth." Similarly, Cutler, Lleras-Munez, and Vogl (2010) demonstrated linkages between access to material resources and health. However, researchers have also discovered that *healthier individuals also create greater wealth for a nation* (Suhrcke, McKee, Arce, Tsolova, & Mortenson, 2005). Accordingly, it becomes appropriate to ask, "Are there disparities in life outcomes between regions with higher and lower per capita income?"

Recent data indicate that there are differences in life expectancy between regions. However, these differences are not as severe as the disparities that exist by mean per capita GDP, as shown in **TABLE 1.5**.

The data in Table 1.5 reveal the numerous combinations and permutations that can exist as individuals begin to allocate loyalties by subgroup. Specifically, the data suggest that, at present, females have an advantage in terms of life expectancy, independent of the subgroup identities that may exist by region. However, it also reveals that Africa is the only area with life expectancies that fall below the mean for all regions for both males and females. Asian females have life expectancies that are .81% higher than the mean for females in all regions and 7.51% higher than the mean for all males.

Subgroup Differences in Health Outcomes by Country/Nation

A particularly interesting pattern can be identified when disparate health outcomes are compared by country/nation. Thus, let's construct a portrait of how the health outcomes of U.S. residents compare with those of the top 10 countries with the "best" health outcomes and the top 10 countries with the "worst" health outcomes.

How does one measure the "best" health outcomes?

Claxton, Cox, Gonzales, Kamal, and Levitt (2015) describe the importance of health outcomes for individuals independent of their country of residency. They reiterate the fact that health care is, in some respects, the single most important good or service that consumers can "purchase." Given that healthcare status affects the very existence of humankind, most people, upon reflection, will agree that health services and the mechanisms for their delivery are highly critical components of any region, country, state, city, or community. Although many measures of the performance of a healthcare system exist, the one that has been selected for the purposes of this text is life expectancy. The reason for the use of this variable is a simple one. Before issues of quality of life can be examined, the energy that is sometimes called the "life force" must be preserved. Stated differently, the issue of quality of data is irrelevant if life itself is not preserved.

Table 1.5 provides data on life expectancy.

What was the data source for Table 1.5?

The data source used for Table 1.5 was the United Nations World Mortality Report Data Booklet (2017). This data source is utilized by researchers, professors, students, and other entities and is considered a premiere source of data on countries worldwide. It is not, however, a primary data source; rather, it is a respected secondary source that is compiled from data not easily accessible by the general public.

What are some other sources that have similar data on the world's countries?

The World Bank (n.d.) publishes data on life expectancy and other measures such as GDP and GDP per capita on an annual basis (see data.worldbank.org); The International Monetary Fund also provides data on overall population (http://www.imf.org/en/Data), GDP, GDP per capita, and other economic measures. The United Nations Global Indicator Database (n.d.) includes statistical data on country-level disparities in terms of gender, overall poverty, and other variables (see data.un.org). The data provided are not "raw" but have been processed into an index. An **index** is a single number that utilizes weights and other statistical processes to develop a single summary measure.

Other online sites also provide life expectancy measures. However, these sites normally obtain their data from *The World Factbook* (Central Intelligence Agency, 2017 and 2018), which is considered as being a reasonably accurate source of secondary data for use in this chapter. The CIA World Factbook is published annually and provides data for each country/independent state and other geopolitical areas in 10 areas that include people and society, government, economy, and others.

Are you saying that the data may not be 100% accurate?

The massive amount of data that exists across the various countries, territories, and other geographic world divisions places virtually all data collected into the category of data estimates. A data estimate is an approximate number and is based upon currently available information. Thus, the data on life expectancy for countries worldwide are "guesses" in that they reflect the most accurate information available.

TABLE 1.6 Country Rankings Based on Life Expectancy, 2017

Rank	Country	World Region	Life Expectancy	% of Difference
32	United States	North America	80.0	Reference
1	Monaco	Europe	89.4	+11.75
2	Japan	Asia	85.3	+6.63
3	Singapore	Asia	85.2	+6.50
4	Macau	Asia	84.6	+5.75
5	San Marino	Europe	83.3	+4.13
6	Iceland	Europe	83.1	+3.88
7	Hong Kong	Asia	83.0	+3.75
8	Andorra	Europe	82.9	+3.63
9	Guernsey	Europe	82.6	+3.25
10	Switzerland	Europe	82.6	+3.25

Data from CIA World Factbook, 2017-2018. Accessed at https://www.cia.gov/library/publications/the-world-factbook/geos/et.html

Which 10 countries have the "best" health outcomes, as measured by life expectancy?

TABLE 1.6 lists the countries/independent states with the "best" healthcare outcomes as measured by life expectancy. Note that the United States is not among the top 10 countries.

Table 1.6 shows that the United States does not have the best health outcomes in the world as measured by life expectancy. But, isn't the United States the most affluent country in the world, and doesn't it spend the greatest proportion of its GDP on health care?

Despite its affluence, the United States is not in the top 10 with regard to health outcomes. **TABLE 1.7** lists the GDP of the 10 countries with the highest life expectancy and the percentage of GDP spent on health care. Although the percentage of GDP spent on health care could not be identified for each of these countries, Table 1.7 clearly demonstrates that the United States spends the greatest percentage of GDP on health care relative to those countries for which data were available. Table 1.7 contains data for 2014 (the last year that all the data in the table were available). In 2014, the United States ranked thirty-second in terms of life expectancy and, as of July 2017, the ranking was 43rd (CIA World Factbook, 2017).

What do the data in Table 1.7 reveal?

The data reveal that in 2014, the most recent data that were available for each of the countries, the United States spent 17.1% of its GDP on health care; in contrast, Monaco spent only 4.3%. Thus, the United States spent 297.67% more of its GDP on health

TABLE 1.7 Percentage of GDP Spent on Health Care of The Countries of Top 10 Life Expectancy, 2014

Rank	Country	World Region	Life Expectancy	Total GDP (Billion U.S. Dollars)	% GDP Spent on Health Care	% GDP Spent on Health Care U.S. vs. Comparison
1	Monaco	Europe	89.57	$7.27	4.3%	297.67% more
2	Macau	Asia	84.48	$82.09	N/A	—
3	Japan	Asia	84.46	$4,807.00	10.2%	67.64% more
4	Singapore	Asia	84.38	$462.60	4.9%	248.97% more
5	San Marino	Europe	83.18	$1.96	6.1%	180.33% more
6	Hong Kong	Asia	82.78	$405.00	N/A	—
7	Andorra	Europe	82.65	$3.36	8.1%	111.11% more
8	Switzerland	Europe	82.39	$478.30	11.7%	46.15% more
9	Guernsey	Europe	82.39	$3.45	N/A	—
10	Australia	Oceania	82.07	$1,454.00	9.4%	81.91% more
43[a]	United States	North America	79.56	$17,520.00	17.1%	—

[a]his number is U.S.'s ranking using all 267 geopolitical areas. However, when using the 195 countries/independent states, the ranking is 32. The percent differences were calculated by the authors.
Central Intelligence Agency. (2017-2018). The world factbook. Retrieved from https://www.cia.gov/library/publications /the-world-factbook
Central Intelligence Agency. (2017). The world factbook.
Central Intelligence Agency. (2016). The world factbook.

care than did Monaco. Triple digit differences in the percent of GDP spent on health care also occurred between the United States and Singapore (248.97%), San Marino (180.37%), and Andorra (111.11%).

Why is there such a huge difference in healthcare spending?

The differences in spending occur for several reasons. First, cultural values differ across these countries and the United States. Cultural values in the United States do not necessarily support maximum life expectancy. For example, while the cultures of some countries/independent states focus upon prevention, American culture remains centered around the enjoyment of pleasure and the use of health care to cure or abate symptoms when illness and/or disease occurs. This unspoken attitude is even observable among healthcare administrators, public health professionals, and clinicians. Although the percentage of GDP spent on health care could not be identified for each of these countries, Table 1.7 clearly demonstrates that the United States spends the greatest percentage of GDP on health care compared to those countries for which data are available.

These dollars are disproportionately spent on health resources needed to support the treatment of illness and disease.

Thus, the United States has the most comprehensive curative healthcare system in the world. This system consists of approximately 951,061 physicians (Kaiser Family Foundation, 2017a), 4,153,657 nurses (Kaiser Family Foundation, 2017b), 5,627 hospitals (American Hospital Association, 2018), 61,594 pharmacies (SK&A, 2017), 15,600 nursing homes (Harris-Kojetin et al, 2016), 274 managed care organizations (Kaiser Family Foundation, 2017c), and a vast array of other personnel and organizational systems that are available to address illness and disease once they occur.

Chambers (2015) cites data which reveal that in 2013, approximately $3.3 billion was spent by visitors from other countries who came to the United States to access the health resources in this country. In 2003, patients from other countries only spent $1.6 billion.

But I thought that many Americans also go abroad to purchase health care services?

The publication, Patients Beyond Borders (2017), includes Costa Rica, India, Israel, Malaysia, Mexico, Singapore, South Korea, Taiwan, Thailand, Turkey, and the United States as being "top destinations" in the medical tourism industry. However, while patients seek cosmetic surgery, dentistry, weight loss solutions, and, in some cases, curative medical solutions for late-stage cancer, and/or cardiovascular disease in these other countries, the American trade surplus for medical services are generally for highly complex curative solutions for which the United States' medical system is considered as a world leader. Moreover, many of the physicians who deliver services in other popular medical tourism regions were trained in the United States (Chen & Wilson, 2013).

Even if medical tourism is bypassed, discussions of the disparities in the percent of domestic product spent by the United States and other countries on health care require contexting by: (1) holding constant the severity of the illnesses/diseases treated in the United States relative to the other countries listed in Table 1.7; (2) characterizing the health problems of the residents of these other countries versus the American population; (3) comparing the distribution of each country's population by age, gender, education, and marital status; (4) identifying environmental differences between residents of the United States and residents of those countries who rank in the top ten in terms of life expectancy; and, (5) assessing other factors. However, the completion of such an analysis with such factors is beyond the range of topics for this text. Nevertheless, such data cannot be used to support an argument that the U.S. healthcare system is one that functions poorly and/or only "moderately well" without additional analysis.

However, the data presented reveal that the United States is nowhere close to being at the top of all countries in life expectancy rankings. However, additional statistical analysis is required in order to interpret the meaning of such a disparity.

Is there a full ranking of all countries?

A full ranking of all countries is available through the CIA's World Factbooks.

Infant mortality is often used to assess the functioning of a health care system.

Does the United States have the lowest infant mortality rate? The United States does not have the lowest infant mortality rate.

According to *The World Factbook* (Central Intelligence Agency, 2017), many countries and/or geopolitical areas have lower infant mortality rates than the United States. Indeed, countries such as Latvia, Taiwan, Israel, and Bosnia and Herzegovina have lower infant mortality rates than the United States. The United States currently ranks 57th in terms of infant mortality. But, such data cannot be immediately used to support the thesis that the U.S. healthcare system functions poorly and/or is only moderately efficient without the use of a robust statistical analysis. For example, Ahrens, Thoma, Rosen et al. (2017), using data obtained from the National Center for Health Statistics, found that from 2000–2010, multiple births infants were at higher risk of infant mortality due to unintentional injury and homicide. These are not, of course, factors that suggest a failure of the health care system. Matthews and MacDorman (2013) found that twins and other infants who are multiple births have an infant mortality rate that is 500% higher than single births. Medical technology in the United States that enhances maternal fertility through multiple births is advanced. Disparities in infant mortality rates in the United States are also associated with maternal age, maternal health status, marital status, education, and other variables. Thus, infant mortality rates may be higher in the United States because of the increase in the population of women over age 35 who can now, because of medical advances, select to give birth. However, at age 35, females in the United States are also more likely to be diabetic, hypertensive, and/or overweight. Thus, variables such as these must be held constant across countries in order to argue that higher infant mortality rates in the United States should be viewed as a "symptom" of a "flawed" American healthcare system.

So, are you saying that although the United States has the highest level of healthcare expenditures, both absolutely and relatively, but not the highest life expectancy nor the lowest infant mortality rate this data does <u>not</u> suggest that health administrators and other healthcare personnel are failing in the maximization of outcomes from the healthcare resources available to them?

This is the exact argument that is being made. An abundance of researchers use such data as a source for criticizing healthcare outcomes in the United States (Guyatt et al., 2007; Institute of Medicine and National Research Council, 2013; Preston & Ho, 2009). This conclusion is one that can, should be, and is, being challenged in this text. As mentioned, data on the American value structure suggest that the American public, on average, endorses, upholds, and revels in a lifestyle characterized by behaviors that do not support the maximum length and quality of life (Loprinzi et al., 2016). Moreover, a number of studies have confirmed that, overall, Americans are satisfied with the quality of the health care that they receive within the United States.

Huerta, Harle, Ford, Diana, and Menachemi (2016), utilizing data from the American Hospital Association's Annual Survey of Hospitals, as well as data from Medicare's Hospital Compare and other sources, discovered that, for hospitals, the higher costs of health care were directly associated with greater levels of patient satisfaction. Similarly, Joshi, McCormick, Sully, Garvan, and Plastaras (2016) found that 80.43% to 88.13% of workers were satisfied with the medical care that they received for their injuries.

Medicare's Hospital Compare for the year 2015 reported that approximately 80% of the participating hospitals received a satisfaction rating of 3 and above (Centers for Medicare and Medicaid Services, n.d.a). *Numerous other studies exist that reveal that, in general, Americans are satisfied with the U.S. healthcare system.*

Why, then, do comparisons in health care by country reveal that the United States healthcare system is ranked unfavorably compared with other countries? For example, the World Health Organization (2000), in their last healthcare ranking on efficiency by country placed the United States at thirty-seventh. This ranking was far behind Germany (5th), Canada (10th), Great Britain (1st), Japan (10th), and other countries based upon differences in costs, access, and outcomes. More recently, the Commonwealth Fund in a 2014 report which compared 11 countries, placed the United States last in terms of healthcare system performance (Davis, Stremkis, Squires et al., 2014).

Such comparisons are reminiscent of the stereotypical apples-to-oranges measure for the simple reason that a healthcare system and its administrators must maximize healthcare outcomes within the *framework of the existent culture and/or subcultures within each country.* Anthropologists have characterized American culture as valuing materialism, competition, personal and institutional freedom, equality, and other elements (Hofstede, 1991).

A number of other sources have also documented the importance of each country's values. For example, Roinen, LäHteenmaki, and Tvorila (1999) characterized some of these variables for residents of Finland—one of the countries that exceeds the United States in life expectancy. Their study identified three health-related factors (general health interest, light product interest, and natural product interest) and three taste-related factors (craving for sweet foods, using food as a reward, pleasure) that could be used to best describe the framework of a country's culture.

When this framework is applied to the American lifestyle, it appears that Americans are willing to trade off a few additional years of life in order to maintain the freedom to eat whatever is desired, to engage or not engage in physical activity, and to take part in other morbific activities of their choice. Thus, healthcare systems maximize healthcare outcomes but are constrained by the chosen lifestyles of a country's residents. The Mayo Clinic published a study that found 97.3% of the participating adults did not have healthy lifestyles. The parameters of the study included exercise, diet, smoker status, and body fat percentage (Loprinzi et al., 2016). Another study conducted by Li et al., (2017) found that Americans who choose to live according to a healthy lifestyle could expect to have a greater life expectancy compared to their counterparts who did not have healthy habits.

Do the data suggest that the U.S. healthcare system should not be harshly judged based on the fact that the United States spends the greatest proportion of its GDP on health care but does not have the highest life expectancy?

Yes, life expectancy is highest in Europe and the Far East. However, when life expectancy and those countries with the highest GDP are examined, an interesting portrait emerges. We direct the reader to the preliminary data and subsequent calculations that will support this argument. Consider a tool from statistics called the Pearson correlation coefficient. The **Pearson correlation coefficient (r)** is used to assess whether two or more variables are associated. This value provides a quantitative measure of the correlation between two variables ($-1 < r < 1$). Two variables can be positively correlated ($r > 0$), negatively correlated ($r < 0$), or uncorrelated ($r = 0$).

Because life expectancy and the percentage of GDP spent on health care are both quantitative variables, a Pearson correlation coefficient can be calculated in which life expectancy is the dependent variable and the

percentage of GDP spent on health care is the independent variable. The Pearson correlation coefficient can be calculated using most standard statistics packages (e.g., SAS, SPSS, STATA, R) (Weaver & Wuensch, 2013). Importantly, for persons who are not statisticians, online statistical calculators now exist that require no advanced knowledge of statistics in order to use.

TABLE 1.8 shows life expectancy and percentage of GDP spending on health care for eight countries including the United States. It is important to remember that the Department of State, the United Nations, the CIA, and other authorities have varied listings regarding the number of and names for countries, independent states and other geopolitical areas. For our analyses, data were used from the CIA World Factbooks for the years 2014 and 2017. We have, however, provided information on the highest life expectancies, the commonly listed countries/independent states, and geopolitical areas. For example, the complete listing from the source does not include Vatican City (Holy See), Cabo Verde (Cape Verde), South Sudan, Nepal, Kosovo, Taiwan, Montenegro, or Palestine, nor a number of other island and/or other geopolitical entities. The table below includes the data used as a basis for the calculation of the Pearson correlation coefficient for the top 10 countries/independent states with the highest life expectancy in 2014. The year 2014 was used because correlation coefficient calculations require data for the same time period.

Pearson correlation:

$$r = -0.6409 \quad p = 0.12089$$

$$r^2 = .4108 \quad n = 7$$

Based on these data, the Pearson correlation coefficient (r) is −0.6409. The p-value is 0.12089. Thus, the relationship between mean life expectancy and the percentage of GDP

TABLE 1.8 Data Used to Generate Pearson Correlation Coefficient

Country	Life Expectancy	% GDP Spent on Health Care
Monaco	89.57	4.3%
Japan	84.46	10.2%
Singapore	84.38	4.9%
San Marino	83.18	6.1%
Andorra	82.65	8.1%
Switzerland	82.39	11.7%
Australia	82.07	9.4%
United States	79.56	17.1%

Source: CIA Constructed with country-specific data found in *The World Factbook* 2017-2018. https://www.cia.gov/library/publications/the-world-factbook /geos/et.html and CIA World Factbook 2017, and the CIA World Factbook 2016.

spent on healthcare expenditures is negative, of moderate strength and non-significant.

More specifically, there is a moderate and strong *negative* relationship between life expectancy and the percentage of GDP spent on health care. That is, for the top 7 countries for which data were available, the higher the percentage of GDP spent on health care, the lower the life expectancy. How might this be possible?

As can be seen, this simple analysis reveals that there is no basis for an analyst to claim that the American healthcare system is flawed because it spends the higher percent of GDP on health care but does not have the highest life expectancy. Yet, so many healthcare researchers explicitly assume that the relationship between the percentage of gross domestic product spent on health care is and/or ought to be positively related to life expectancy.

Papanicolas, Woskie, and Jha (2018) state that, "In 2016, the United States spent nearly twice as much as 10 high-income countries on medical care and performed less well on many population health outcomes," (pg. 1024). Jones and Kantarkian (2015) state, "The United States is the richest nation in the world, and we spend more on health care than any other nation (18% of our gross domestic product; two to three times more than other advanced nations). Yet, we rank poorly in objective measures of health care outcomes," (pg. 2194). Numerous similar statements could be cited. However, this often-repeated refrain is based upon the implicit assumption that these healthcare dollars are expended for preventive medicine and not for curative medicine. The negative correlation between the percentage of gross domestic product spent on health care and life expectancy directly validates such a statement. In effect, findings for the seven sets of countries with the highest life expectancy suggests that countries with populations who are culturally and personally oriented toward healthy living will spend a smaller percentage of gross domestic product on health care because residents have less illnesses and diseases. Stated differently, logic suggests that sicker individuals and nations spend larger percentages of their income on health care than do healthier individuals and/or nations.

Another way to untangle this relationship is to examine the **coefficient of determination r^2**, which is a statistical tool that is used to determine the proportion of the variance in the dependent variable that can be predicted from the independent variable. It can be used to measure the percentage of the variation in life expectancy that is associated with the percentage of GDP that these countries spent on health care. In statistical packages, the value is usually presented as r^2 ($0 < r^2 < 1$). In this case, the r^2 was 0.4108. This value can be thought of as how strong the estimate is when x (i.e., percentage of GDP spent on health care) is used to predict y (i.e., life expectancy). In this case, 41.08% of the change in life expectancy is associated with the change in the percentage of GDP that these countries spend on health care. Moreover, as mentioned earlier, this association is a negative one (see **FIGURE 1.3**).

What does this exercise tell us?

This exercise suggests that current and future healthcare administrators, public health professionals, clinicians, researchers, and policy analysts may wish to eliminate the use of the statement, "The United States is the wealthiest nation in the world and spends the greatest proportion of its GDP on health care but has only moderate health outcomes!" As this simple exercise reveals, the assumption of a positive relationship between life expectancy and the percentage of GDP spent on health care is not accurate.

Furthermore, claims that the United States is the wealthiest nation on earth are also not correct. First, it becomes clear that the claim that the United States is the richest country in the world is incorrect. It is true that the United States has the highest GDP. For the year 2017, with all quarters reporting, the U.S. Department of Commerce, Bureau of

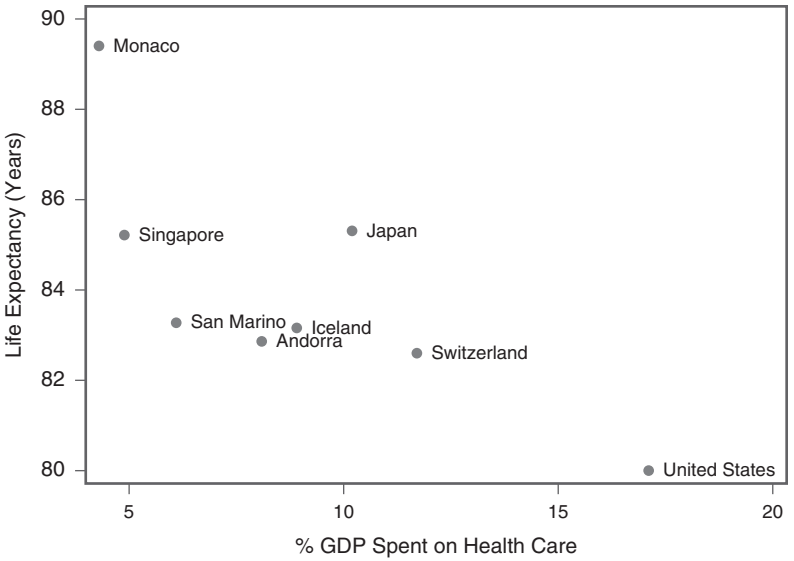

FIGURE 1.3 Scatterplot of life expectancy versus percentage of GDP spent on health care.

Economic Analysis (2018) estimated that the nation's GDP was $19,736.5 trillion. However, when GDP is modified by family size, a better estimate of wealth is revealed. When the U.S. GDP is converted to per capita income by dividing it by the total population, it can be seen that the United States barely ranks among the top 10 nations in the world in terms of income. Thus, while the United States does have the highest gross domestic product on the planet, it absolutely does not have the highest per capita income. **TABLE 1.9** below lists the nations with the highest life expectancy by per capita income.

As Table 1.9 reveals, of the top ten countries with the higher life expectancy, seven are significantly wealthier than the United States when per capita income is used as the measure of material affluence. Monaco, for example, is 98.90% wealthier than the United States while Macau is 148.08% wealthier. Singapore has a per capita income that is 51.8% higher and Australia's per capita income is 17.85% higher. Accordingly, it becomes important to apply a simple tool such as a correlation coefficient to ask, "What is the relationship between life expectancy and per capita income?"

In order to better understand whether an association exists between *life expectancy* and *per capita income* in the world today, an online calculator was used to estimate the correlation coefficient between per capita income and life expectancy using the data in the Table 1.8. The specific Pearson correlation coefficient that was used is available at Social Science Statistics (http://www.socscistatistics.com/tests/pearson/). The findings from the calculator indicate that the Pearson correlation coefficient of the relationship between life expectancy and per capita income was $r = 0.06028$. This Pearson correlation coefficient calculation indicates that there is a moderately strong and positive association between per capita income and life expectancy for the countries with the longest mean lifespans. However, this relationship is only marginally significant (0.065095). The coefficient of determination was 0.3634. This revealed that the percentage of the change in life expectancy that occurred with a percentage change in per capita income was 36.34%. **FIGURE 1.4** is the scatterplot of the relationship.

Thus, based on the argument that this is the "best of times" for humanity, it is not

TABLE 1.9 Per Capita Income of The Countries of Top 10 Life Expectancy and The United States, 2014

Rank	Country	Life Expectancy	Per Capita Income in U.S. Dollars	% Difference
32	United States	79.56	54,900	Reference
1	Monaco	89.57	109,200	+98.91
2	Macau	84.48	129,100	+135.15
3	Japan	84.46	37,800	–31.14
4	Singapore	84.38	84,600	+54.10
5	San Marino	83.18	63,300	+15.30
6	Hong Kong	82.78	55,700	+1.45
7	Andorra	82.65	51,300	–6.55
8	Switzerland	82.39	58,800	+7.10
9	Guernsey	82.39	52,300	–4.74
10	Australia	82.07	64,700	+17.85
$r = 0.6028$ $r^2 = 0.3634$ $n = 10$ $p = 0.065095$				

Constructed by authors with data from the CIA Factbook 2017-2018, CIA Factbook 2017 and CIA Factbook 2016.

merely healthcare expenditures that determine life expectancy. Higher *per capita income* correlates with multiple determinants of health outcomes. McGovern, Miller, and Hughes-Cromwick (2014) raise the possibility that investments are not merely needed in health care but in the other equally and/or more powerful determinants of health outcomes such as housing, family support services, education, employment, and so on. A higher per capita income allows expenditures on non-healthcare-related determinants of health care to be made.

How did you calculate the Pearson correlation coefficient?

The data used to generate the Pearson correlation coefficient have been taken from information displayed in this chapter. Elsewhere, information will be provided on how to input data into various online statistical calculators in order to "harvest" information about

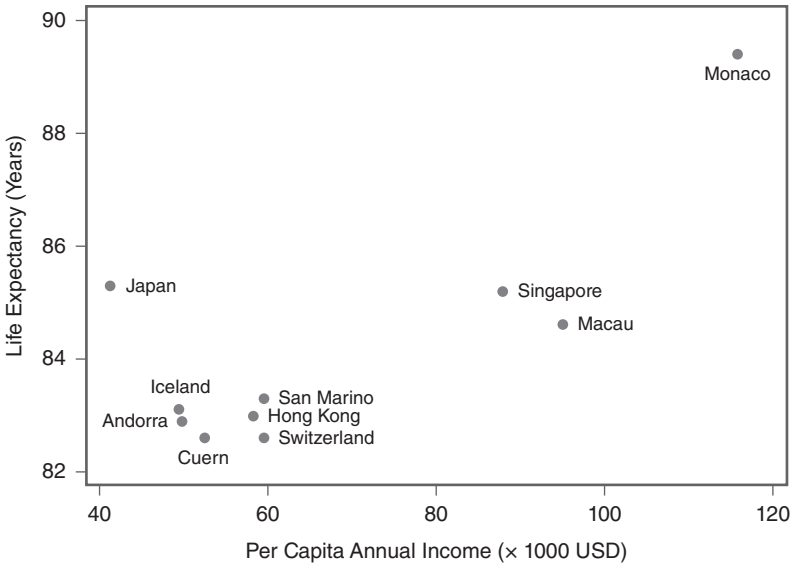

FIGURE 1.4 Scatterplot of life expectancy versus per capita income.

health disparities in communities and healthcare institutions.

The Best and Worst of All Times

TABLE 1.10 shows that vast disparities exist between both life expectancies and per capita income for the 10 countries in the world with the highest life expectancies and the 10 countries in the world with the lowest life expectancies.

The data in Table 1.10 reveal that, for humans in the world in general, it is both the best of times and the worst of times. First, despite the existence of the observed disparities, individuals throughout the globe have experienced increases in life expectancy. For example, data from the 1998 CIA World Factbook reveal that in 1998, residents of Chad had a mean life expectancy of 48.22 years relative to 49.44 years in 2014 and 50.66 years in 2017. Likewise, persons who live in the United States had a life expectancy of 76.13 years in 1998 rather than the 79.56 years for 2014 and the 80.00 years in 2017 (CIA World Factbook, 1998; CIA World Factbook, 2017). Simultaneously, the vast disparities in life expectancy and income can generate improvements for all of humankind.

What else do the data in Table 1.10 reveal?

The data in Table 1.10 also reveal that:

- A resident of Monaco, the country with the highest life expectancy, could expect to live 81.16% longer than those who live in Chad, the country with the lowest life expectancy.
- Persons living in Japan, on average, live 69.36% longer than those who live in Guinea-Bissau.
- Those who lived in Singapore in 2014 can expect to have a life expectancy that is 67.12% longer than those who live in Afghanistan.
- The population of Macau had a 2014 life expectancy that was 70.46% higher than those residing in South Africa.
- San Marino's residents, on average, lived 64.58% longer than those who lived in Zambia in 2014.
- Those who lived in Hong Kong in 2014 could expect to, on average, experience "lived life" 61.2% longer than those who live in the Central African Republic.

TABLE 1.10 Percentage Differences in Life Expectancy and Per Capita Income Between The Countries of Top 10 Highest vs. Lowest Life Expectancy, 2014

Rank	Country	Life Expectancy	% Difference (Life Expectancy)	Per Capita Income (U.S. Dollars)	% Difference (Per Capita Income)
1	Monaco	89.57	81.16% higher than Chad	$109,200	+3,944.44
192	Chad	49.44	Reference	$2,700	Reference
2	Macau	84.48	70.46% higher	$129,100	+878.03
191	South Africa	49.56	Reference	$13,200	Reference
3	Japan	84.46	69.36% higher	$37,800	+2,420
190	Guinea-Bissau	49.87	Reference	$1,500	Reference
4	Singapore	84.38	67.12% higher	$84,600	+4,130.00
189	Afghanistan	50.49	Reference	$2,000	Reference
5	San Marino	83.18	64.58% higher	$63,300	+653.57
188	Swaziland	50.54	Reference	$8,400	Reference

6	Hong Kong	82.78	61.20% higher	$55,700	+9,183.33
187	Central African Republic	51.35		$600	
7	Andorra	82.65	60.23% higher	$51,300	+12,725.00
186	Somalia	51.58		$400	
8	Switzerland	82.39	58.96% higher	$58,800	+1,447.37
185	Zambia	51.83		$3,800	
9	Guernsey	82.39	58.90% higher	$52,500	+377.27
184	Namibia	51.85		$11,000	
10	Australia	82.07	57.64% higher	$64,700	+255.49
183	Gabon	52.06		$18,200	

Central Intelligence Agency. (2017). *The World Factbook*. https://www.cia.gov/library/publications/the-world-factbook/geos/et.html

- Residents of Andorra could expect to, on average, inhabit earth 60.23% longer than those who lived in Somalia.
- Persons who lived in Guernsey had a life expectancy at birth that was 58,90% higher than those who lived in Namibia.
- Those who lived in Switzerland had a mean life expectancy that was 58.90% higher than residents of Zambia.

In addition, the quality of day-to-day life in countries that are characterized by the lowest life expectancies is very different from those of their higher-income counterparts. This is because of the vast differences in per capita income. Yet, when such comparisons are left unsaid and unacknowledged, even those who live in the world's poorest nations also live in the best of times.

How can this be the case?

It is the "best of times" for all humans who inhabit planet Earth, because each region and country discussed in this chapter has achieved the longest life expectancy and the greatest per capita income in its known history.

Does this mean that higher per capita income "causes" life expectancy to be higher in the top 10 countries?

Not quite. It simply suggests that enough evidence exists for a more sophisticated analysis to be conducted to determine whether this relationship is causal.

Why would a healthcare administrator, public health professional, clinician, or other healthcare professional need to know this information?

It will enable healthcare administrators and other personnel to better manage their organization by allowing them to quickly and simply understand whether a strong association exists between their various operational policies and procedures and healthcare outcomes.

The collection of knowledge is just one of the many skills that health care administrators and other personnel need in order to address health disparities. **BOX 1.3** includes a listing of other important required skills.

BOX 1.3 Helping Healthcare Administrators to Manage the Delivery of Win-Win Disparity-Reducing Services to All Consumers: The Needed Skills

- Skill #1: Know the primary sources of national, state, and local data that can be used to summarize health disparities.
- Skill #2: Know the sources of national, state, and local data for selected components of the U.S. healthcare system.
- Skill #3: Know general public health data regarding the health and illness areas in which disparities are most prevalent.
- Skill #4: Know how to read and apply univariate and bivariate analysis to data to determine whether healthcare disparities exist.
- Skill #5: Know the language needed in order to assign a statistician the task of analyzing internal data to determine whether any observed disparities are justifiable by factors over which they have no control.
- Skill #6: Apply evidence-based health disparities reduction strategies.
- Skill #7: Analyze theories of organizational change and write a win-win health disparities reduction plan that does not lead to "losses" by one subgroup in order for another subgroup to improve.
- Skill #8: Be able to appraise, assess, and dilute the operation of conscious and/or unconscious "tribalistic" attitudes, beliefs, and opinions that contribute or could contribute to avoidable health disparities in their current or targeted segment of the healthcare system.

Created by authors.

Chapter Summary

What is the topic of this text? How will that subject matter be approached? Does this health disparities book differ in any respect from those already in the marketplace? Whether latent and/or made explicit, these key questions are attached to every new book that becomes part of the world's knowledge base. This chapter provided an orientation to the subject of health disparities from the perspective of a group of authors from different backgrounds and experiences. It is our hope that this team, which includes three professors of healthcare administration, a professor of education who brings new views to the field, a healthcare consultant with intensive experience advising health administrators in the real world, and a professor with a background in library science, will provide fresh and new insights into a field that will necessarily grow in importance over future years.

Review Questions and Problems

1. Based on the discussion in this chapter, do you believe that individuals adopt fads and fashions in their thinking about health and health-related subjects in the same way as they do with their clothing?
2. Select, read, and cite three articles regarding health disparities. Write a critique (250 to 350 words) regarding whether each article reflects similar thinking regarding the subject matter.
3. Do you accept the concept of contemporary subtribes? If so, which subtribes have your greatest degree of loyalty?
4. Are there additional skills that you would like to obtain from reading a text on health disparities?
5. Do you view the present as the "best of times" or the "worst of times" relative to health care?
6. Will using simple online statistical calculators encourage you to more frequently analyze data to explore whether previously undiscussed relationships exist?
7. How do institutionalized definitions of *tribe* differ from the definition of *contemporary subtribalism*?
8. How does gross domestic product differ from gross domestic product per capita?

Key Terms and Concepts

coefficient of determination (R^2) A statistical tool that is used to determine the proportion of the variance in the dependent variable that can be predicted from the independent variable.

contemporary subtribalism The emergence of values, beliefs, and attitudes that develop in defense and protection of any subgroup, whether defined by race/ethnicity, sex, sexual preference, religion, geographic area, occupation, and/or any other grouping when such feelings of loyalty become so intense as to mask solutions and strategies that generate win-win outcomes for all subgroups.

gross domestic product (GDP) per capita An economic concept that is used to measure the amount of dollars each resident would have based on the market value of all goods and services produced in a country.

index A single number that utilizes weights and other statistical processes to develop a single summary measure.

Pearson correlation coefficient (r) Statistical tool used to assess whether two or more variables are associated.

tribe "A group of people who are linked by physical and societal factors such as place of residency or birth, ancestry, culture and customs, religious beliefs, economics, blood relations, common language, or other social constructs, who may or may not have a common ancestor or common leader."

subtribe A tribe or subdivision within a tribe.

References

Ahrens, K. A., Thoma, M. E., Rossen, L. M. Warner, M. & Simon, A. E. (2017). Plurality of birth and infant mortality due to external causes in the United States, 2000-2010. *American Journal of Epidemiology 185*(5), 335–344. Doi: 10.1003/aje/kww/119.

American Hospital Association. (2018). Fast facts on U.S. hospitals, 2018. Retrieved from http://www.aha.org/research/rc/stat-studies/fast-facts.shtml

American Sign Language Dictionary. (n.d.). Tribe. Retrieved from https://www.handspeak.com/word/search/index.php?id=1616

Arias, E. (2016). Changes in life expectancy by race and Hispanic origin in the United States, 2013–2014. NCHS Data Brief, No. 244. Hyattsville, MD: National Center for Health Statistics.

Bloom, B., Englehart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals*. New York: Longman, pp. 201–207.

Braveman, P. A., Kumanyika, S., Fielding, J., LaVeist, T., Borrell, L. N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: The issues is justice. *American Journal of Public Health*, 101(Suppl 1), S149–S155. doi:10.2105/AjPH2010300062

Byrne, D. (2003). *Health equals wealth*. Bod Gastein, Austria: European Health Forum.

Cambridge Dictionary. (n.d.). Tribe. Retrieved from https://dictionary.cambridge.org/us/dictionary/english/tribe

Centers for Medicare and Medicaid Services. (n.d.a). Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). Retrieved from http://www.hcahpsonline.org

Centers for Medicare and Medicaid Services. (n.d.b). National health expenditures 2016 highlights. Retrieved from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf

Central Intelligence Agency. (2017). *The world factbook*. Retrieved from https://www.cia.gov/library/publications/the-world-factbook

Chambers, A. (2015). Trends in U.S. health travel services trade. USITC Executive Briefing on Trade, Office of Industries.

Chen, L. H., & Wilson, M. E. (2013). The globalization of healthcare: Implications of medical tourism for the infectious disease clinician. *Clinical Infectious Diseases*, 57(12), 1752-1759. https://doi.org/1.1093/cid/cit540.

Claxton, G., Cox, C., Gonzales, S., Kamal, R., & Levitt, L. (2015). Measuring the quality of healthcare in the U.S. Peterson-Kaiser Health System Tracker. Retrieved from https://www.healthsystemtracker

Curtis, F. (2016). The production of American religious freedom. (New York: New York University Press) 2016. *Journal of American History* 104(2), 469–470. https://doi.org/10.1093/jahist/jax184.

Cutler, D., Lleras-Munez, A., & Vogl, T. (2010). Socioeconomic status and health: Dimensions and mechanisms. In: Glied, S., & Smith, P.C. (eds.), *The Oxford handbook of health economics* (pp. 124–163). Oxford: Oxford University Press.

Davis, K., Stremkis, K., Squires, D., & Schoen, C. (2014). Mirror, mirror on the wall: How the performance of the U.S. health-care system compares internationally. 2014 update. The Commonwealth Fund. Pub. No. 175, pg. 13.

Dickens, C. J. H. (1859). *A tale of two cities*. London: Chapman Hall.

Free Dictionary. (n.d.). Tribe. Retrieved from https://www.thefreedictionary.com/tribe

Gardner, H. (1993). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gibson, C., & Jung, K. (2002). *Historical census statistics on population totals by race, 1790 to 1990, and by Hispanic origin, 1790 to 1990, for the United States, regions, divisions, and states*. Washington, DC: U.S. Census Bureau.

Guyatt, G., Devereaux, P. J., Lexchin, J., Stone, C., Yalnizyan, A., Himmelstein, D., . . . Bhatnagaret, N. (2007). A systematic review of studies comparing health outcomes in Canada and the United States. *Open Medicine*, *1*(1).

Harris-Kojetin, L., Sengupta, M., Park-Lee, E., Valverde, R., Caffrey, C., Rome, V., & Lendon, J. (2016). Long-term care providers and services users in the United States: Data from the National Study of Long-Term Care Providers, 2013–2014. National Center for Health Statistics. *Vital Health Stat, 3*(38). Retrieved from https://www.cdc.gov/nchs/fastats/nursing-home-care.htm

Hofstede, G. (1991). *Cultures and organizations: Software of the mind, intellectual cooperation and its importance for survival*. New York: Harper Collins.

Huerta, T. R., Harle, C. A., Ford, E. W., Diana, M. L., & Menachemi, N. (2016). Measuring patient satisfaction's relationship to hospital cost efficiency: Can administrators make a difference? *Health Care Management Review*, *41*(1), 56–63.

Institute for Health Metrics and Evaluation. Growing Gap between longest and shortest lifespans in the U.S. emphasizes the need for policy action. See http://www.healthdata.org/news-release/growing-gap-between-longest-and-shortest-lifespans-us-emphasizes-need-policy-action.

Institute of Medicine and National Research Council. (2013). *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. Washington, DC: The National Academies Press. https://doi.org/10.17226/13497

Jones, G. H., & Kantarjian, H. (2015). Health care in the United States – basic human right or entitlement? *Annals of Oncology 26*(10), 2193-2195. https://doi.org/10.1093/annonc/mdv321.

Joshi, A. B., McCormick, Z. L., Sully, K., Garvan, C., & Plastaras, C. T. (2016). Factors that predict satisfaction with medical care: Data from 27,212 injured workers surveyed for 14 Years. *Journal of Occupational and Environmental Medicine*, *58*(1), 101–107.

Kaiser Family Foundation. (2017a, October). Professionally active physicians. Retrieved from http://kff.org/other/state-indicator/total-active-physicians/

Kaiser Family Foundation. (2017b, October). Total number of professionally active nurses. Retrieved from http://kff.org/other/state-indicator/total-registered-nurses/

Kaiser Family Foundation. (2017c, September). State health facts: Total Medicaid MCOs. Retrieved from http://kff.org/other/state-indicator/total-medicaid-mcos/

Katz-Wise, S.L., Reisner, S.L., White, J.M., & Keo-Meier, C.L. (2016). Differences in sexual orientation diversity and sexual fluidity in attractions. Among gender minority adults in Massachusetts. *Journal of Sex Research 53*(1), 74–84. doi:10.108/ 00224499.2014. 1003028.

Kruss, G., McGrath, S., Petersen, I., & Gastrow, M. (2015). Higher education and economic development: the importance of building technological capabilities. *International Journal of Educational Development*, *43*(1), 22–31.

LaRoche, C. J. (2014). Free black communities and the underground railroad: The geography of resistance. *Journal of American History, 101*(4), 1264–1265, https://doi.org/10.1093/jahist/jax066

Loprinzi, P. D., Branscum, A., Hanks, J. & Smit, E. Healthy Lifestyle Characteristics and Their Joint Association With Cardiovascular Disease Biomarkers in US Adults. Mayo Clinic Proceedings, 2016; DOI: 10.1016/j.mayocp.2016.01.009

Macmillan Dictionary. (n.d.). Tribe. Retrieved from https://www.macmillandictionary.com/us/dictionary/american/tribe

Matthews, T. J., & MacDorman, M. F. (2013). Infant mortality statistics from the 2010 period linked birth/infant death dataset. *National Vital Statistics Report 62*(8), 1–26.

McDonald, J. J. (2007). *American ethnic history: Themes and perspectives*. Edinburgh: Edinburgh University Press.

McGovern, L., Miller, G., & Hughes-Cromwick, P. (2014). Health policy brief: The relative contribution of multiple determinants to health outcomes, health affairs. Retrieved from https://www.healthaffairs.org .doi:1377/hpb2014082/904487

Merriam-Webster Dictionary. (n.d.). Tribe. Retrieved from https://www.merriam-webster.com/dictionary/tribe

Merriam-Webster Learners Dictionary. (n.d.). Tribe. Retrieved from http://www.learnersdictionary.com/definition/tribe

National Center for Health Statistics. (2017). Health, United States, 2016: With chartbook on long-term trends in health. Table 15, Life expectancy at birth at age 65, and at age 75, by sex, race, and Hispanic origin, selected years 1900–2015. Hyattsville, MD: NCHS.

Oxford Living Dictionary. (n.d.). Tribe. Retrieved from https://en.oxforddictionaries.com/definition/tribe/

Papanicolas, J., Woskie, L. R., & Jha, A. K., (2018). Health care spending in the United States and other high-income countries. *Journal of the American Medical Association 219*(10), 1024–1039. Doi:10.1001/jama.2018.11.1150.

Patients Beyond Borders (2017). Medical tourism statistics and facts. www.patientbeyondborders,com. Accessed April 22, 2018.

Preston, S. H., & Ho, J. Y. (2009). Low life expectancy in the United States: Is the health care system at fault? NBER working paper, no. 15213. Washington, DC: National Bureau of Economic Research.

Roberson, R. (2013, September). Helping students find relevance: Teaching the relevance of course content can help students develop into engaged, motivated and self-regulated learners. Psychology Teacher Network. Retrieved from http://www.apa.org/ed/precollege/ptn/2013/09/students-relevance.aspx

Robertson, D. L. (2016). Decolonizing the academy with subversive acts of indigenous research: A review of *Yakama Rising* and *Bad Indians*. *Sociology of Race and Ethnicity*, *2*(2), 248–252.

Roinen, K., LäHteenmakim, L., & Tvorila, H. (1999). Quantification of consumer attitudes to health and hedonic characteristics of foods. *Appetite*, 33(1), 71–88. https://doi.org/10.1006/appe/1999.0232

SK&A. (2017, April). National pharmacy market summary: Market insights report. Retrieved from http://www.skainfo.com/reports/most-powerful-pharmacies

Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations, *1 (1 ed.)*. London: W. Strahan. Retrieved 2018-04-07., volume 2 via Google Books.

Statista. (2017). Global population shares. Retrieved from https://www.statista.com/statitics/237584/distribution-of-the-world-population-by-continent

Suhrcke, M., McKee, M., Arce, R. S., Tsolova, S., & Mortenson, J. (2005). *The contribution of health to the economy in the European Union*. Luxembourg: Office for Official Publications of the European Communities.

Sulaiman, C., Bala, U., Tijani, B. A., Waziri, S. I., & Maji, I. K. (2015). Human capital, technology, and economic growth: Evidence from Nigeria. *Sage Open Journal*. 10.1177/2158244015615166.

Svizzero, S., & Tisdell, C. A. (2016). Economic evolution, diversity of societies and stages of economic development: A critique of theories applied to hunters and gatherers and their successors. *Cogent Economics & Finance. 4*(1), doi:10.1080/23322039.2016.1161322.

U.S. Census Bureau. (2016, July 1). QuickFacts. Retrieved from https://www.census.gov/quickfacts/fact/table/US/PST045216

U.S. Census Bureau. (2018). Population clock. Retrieved from https://www.census.gov/popclock/

U.S. Department of Commerce, Bureau of Economic Analysis. (2018, February 28). National income

and product accounts. Gross domestic product: Fourth quarter and annual 2017 (second estimate). Retrieved from https://www.bea.gov/scb/2018/02-february/0218-gdp-and-the-economy.htm

U.S. Department of Health and Human Services. (2008). The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020. Phase I report: Recommendations for the framework and format of Healthy People 2020. Retrieved from http://www.healthypeople.gov/sites/default/files/PhaseI_0.pdf

U.S. Department of Health and Human Resources. (2017). NHE fact sheet, 2016. Retrieved from https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html

United Nations. (n.d.). Global Indicator Database. Retrieved from data.un.org

United Nations, Department of Economic and Social Affairs, Population Division (2017). World Mortality 2017: Data Booklet.

Vocabulary.com. (n.d.). Tribe. Retrieved from https://www.vocabulary.com/dictionary/tribe

Weaver, B., & Wuensch, K. L. (2013). SPSS and SAS programs for comparing Pearson correlations and OLS regression coefficients. *Behavior Research Methods*, *45*(3), 880–895.

World Atlas. (n.d.). The continents of the world per capita GDP. Retrieved from https://www.worldatlas.com

World Bank. (n.d.). World Bank Open Data. Retrieved from https://data.worldbank.org

World Health Organization. (n.d.). NHA indicators. Global Health Expenditure Database. Retrieved from http://apps.who.int/nha/database/ViewData/Indicators/en

World Health Organization. (2000). *The World Health Report 2000: Health systems: improving performance*. Geneva: World Health Organization.

World Population Review. (2017). Continent and region populations, 2017. Retrieved from world population.com/continents

Worldometers. (n.d.). Retrieved from www.worldometers.info

Yanping, L., Pan, A., Wand, D. D., Liu, X., Dhana, K., Franco, O., . . . Hu, F. B. Abstract 20397: The impact of healthy lifestyle on life expectancy in the U.S. population. *Circulation*, 2017;136:A20397.

Your Dictionary. (n.d.). Tribe. Retrieved from http://www.yourdictionary.com/tribe