Care CEUs

Continuing Education for Nursing Home Administrators

Childhood Obesity

Introduction

Childhood obesity has reached epidemic status in the U.S. With childhood obesity rates on the rise, many health care professionals are asking the following question: how can health care professionals work to effectively prevent childhood obesity, and help those individuals suffering from childhood obesity lose weight? This course will answer that very question, while providing insight into weight loss recommendations.

Section 1: Childhood Obesity

Childhood obesity has become a public health concern in the U.S. It has reached epidemic status, and research suggests that the prevalence of childhood obesity is on the rise. The question that remains is, how can health care professionals work to effectively prevent childhood obesity, and help those individuals suffering from childhood obesity lose weight? Health care professionals can work to effectively prevent childhood obesity, and help those individuals suffering from childhood obesity lose weight, by, first and foremost, possessing insight into childhood obesity. This section of the course will provide insight into childhood obesity to build awareness among health care professionals. The information found within this section was derived from materials provided by the Centers for Disease Control and Prevention (CDC) unless, otherwise, specified (Centers for Disease Control and Prevention [CDC], 2021).

What is obesity?

- Obesity may refer to a condition characterized by abnormal or excessive fat accumulation, which may impair health.
- Health care professionals should note the following: the fundamental cause of obesity is an energy imbalance between the calories consumed and the calories expended.

How can a health care professional determine if an individual is obese?

- A health care professional can determine if an individual is obese by calculating his or her body mass index (BMI). Body mass index (BMI) may refer to a value derived from an individual's height and weight.
- Health care professionals may use the following formula to calculate an individual's BMI: BMI = weight (kg) / height $(m)^2$; health care professionals may also use the

following formula to calculate an individual's BMI: BMI = weight (lb) / [height (in)]^2 x 703.

- Health care professionals should note the following: BMI does not measure body fat directly; BMI can be used to help determine if an individual is underweight, at a normal weight, overweight, or obese. Health care professionals should also note the following:
    - **Underweight** - an individual may be considered to be underweight if his or her BMI is less than 18.5 kg/m^2.
    - **Normal weight** - an individual may be considered to be at a normal weight, or healthy weight, if his or her BMI is between 18.5 - 24.9 kg/m^2.
    - **Overweight** - an individual may be considered to be overweight if his or her BMI is between 25.0 - 29.9 kg/m^2.
    - **Obese** - an individual may be considered to be obese if his or her BMI is greater than or equal to 30.0 kg/m^2.

What is childhood obesity?

- Childhood obesity may refer to a condition in which a child or adolescent is significantly overweight for his or her age and height; a child/adolescent is well above the normal or healthy weight for his or her age and height.

How can a health care professional determine if a child/adolescent is obese?

- A health care professional can determine if a child/adolescent is obese by calculating the his or her age-related BMI, otherwise referred to as BMI-for-age.
- Health care professionals should note the following: for children and adolescents, BMI is age- and sex-specific and is often referred to as BMI-for-age; a child's weight status is determined using an age- and sex-specific percentile for BMI rather than the previously highlighted BMI categories used for adults; the reason a child's weight status is determined using an age- and sex-specific percentile for BMI is because children's body composition varies as they age and varies between boys and girls. Health care professionals should also note the following: a child/ adolescent is considered to be overweight if his or her BMI is equal to or above the 85th percentile and below the 95th percentile for children and teens of the same

age and sex; a child/adolescent is considered to be obese if his or her BMI is equal to or above the 95th percentile for children and teens of the same age and sex.

- Health care professionals should note the child/adolescent weight status categories found below:
    - **Underweight** - a child/adolescent may be considered to be underweight if his or her BMI is less than the 5th percentile.
    - **Normal weight** - a child/adolescent may be considered to be at a normal weight, or healthy weight, if his or her BMI is in the 5th percentile to less than the 85th percentile.
    - **Overweight** - a child/adolescent may be considered to be overweight if his or her BMI is in the 85th to less than the 95th percentile.
    - **Obese** - a child/adolescent may be considered to be obese if his or her BMI is in the 95th percentile or greater.

What are the risk factors for childhood obesity?

- **Diet/inadequate nutrition** - the first risk factor that may come to mind when considering childhood obesity is diet, or inadequate nutrition. Children and adolescents often gain weight due to diets rich in high-calorie foods (e.g., fast food). Health care professionals should note that foods and beverages high in sugar (e.g., candy) may also contribute to childhood obesity.
- **Sedentary lifestyle** - another risk factor that may initially come to mind when considering childhood obesity is a sedentary lifestyle (note: the term sedentary lifestyle may refer to an inactive lifestyle characterized by extended periods of sitting or laying down, with little to no physical activity). Health care professionals should note the following: long periods of television watching, playing video games, and excessive social media use may all contribute to a sedentary lifestyle (note: the term social media may refer to any electronically driven application that enables individuals to create and share content for the purposes of virtual communication).
- **Lack of physical activity** - to build on the previous risk factor, a lack of physical activity may also contribute to childhood obesity (note: the term physical activity may refer to any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level) (U.S. Department of Health

and Human Services, 2018). Health care professionals should note the following: children and adolescents who do not engage in regular physical activity are more likely to gain weight, when compared to children and adolescents who do engage in regular physical activity, because they don't burn as many calories (note: the term calorie may refer to a unit of energy found in food and beverages; the amount of heat required at a pressure of one atmosphere to raise the temperature of one gram of water one degree Celsius).

- **Family environment** - the family environment can contribute to childhood obesity. Health care professionals should note that if a child is part of a family full of overweight and/or obese individuals, the child is more likely to be overweight or obese.

- **Stress** - personal, school-related, and family and friend-related stress can lead to or contribute to childhood obesity. Health care professionals should note the following: some children may overeat to help cope with stress.

- **Genetics** - genetics and syndromes/conditions related to genetics may play a role in childhood obesity. Health care professionals should note the following: syndromes/conditions, such as Prader-Will syndrome, may contribute to childhood obesity (note: Prader-Will syndrome may refer to a genetic disorder caused by a loss of function of specific genes on chromosome 15).

- **Medications** - finally, some medications may lead to or contribute to childhood obesity. Health care professionals should note that the following medications may lead to or contribute to childhood obesity: prednisone, lithium, amitriptyline, paroxetine, gabapentin, and propranolol.

What are the conditions typically associated with childhood obesity?

Childhood obesity may lead or contribute to several health-related conditions. The most common conditions typically associated with childhood obesity may be found below.

- **Type 2 diabetes** - type 2 diabetes may refer to a chronic condition that affects the way the body processes and uses insulin. At one time, type 2 diabetes was rare in children and adolescent patient populations, however due to the rise in childhood obesity it is becoming more and more common. Specific information regarding type 2 diabetes in children/adolescents may be found below.

- Risk factors for type 2 diabetes in children/adolescents include: overweight/obesity; inactivity; family history (note: a child's risk of type 2 diabetes increases if he or she has a parent or sibling with type 2 diabetes); age and sex (note: adolescent girls are more likely to develop type 2 diabetes than are adolescent boys); low birth weight; preterm birth (note: individuals born prematurely, before 39 to 42 weeks' gestation, have a higher risk of type 2 diabetes).
- Symptoms of type 2 diabetes include: thirst, frequent urination, hunger, fatigue, blurred vision, and darkened areas of the skin (e.g., dark areas around the neck or under the armpits).
- Individuals suffering from type 2 diabetes may experience hyperglycemia. Hyperglycemia may refer to high blood sugar and/or a condition characterized by high blood sugar. Symptoms of hyperglycemia include: excess thirst, frequent urination, and blurred vision.
- Diabetes screening is recommended for children who are overweight or obese who have started puberty or are at least 10 years old and have at least one other risk factor for type 2 diabetes.
- Complications associated with type 2 diabetes in children/adolescents include the following: high blood pressure, kidney disease, blindness, and amputation.

- **Hypertension** - hypertension may refer to high blood pressure; blood pressure consistently above a normal blood pressure level (note: a normal blood pressure level is less than 120/80 mmHg). Much like with type 2 diabetes, hypertension was once rare among children and adolescents- however, due to the rise in childhood obesity, it is becoming more and more common. Specific information regarding hypertension in children/adolescents may be found below.
    - Hypertension in children is blood pressure that is the same as or higher than 95 percent of children who are the same age, sex, and height.
    - Health care professionals should note that the normal blood pressure level for children may vary depending on age, sex, and height.
    - Risk factors for hypertension in children/adolescents include: overweight/obesity; inactivity; family history; male sex; consuming high quantities of salt; and smoking.

- Hypertension does not, typically, cause symptoms. However, the following signs and symptoms may indicate a hypertension-related emergency: headache, seizure, nausea, vomiting, chest pain, heart palpitations, and shortness of breath.
- Individuals suffering from the aforementioned hypertension-related emergency signs/symptoms should seek medical attention.
- Blood pressure checks should occur during routine medical appointments beginning at age three.
- Complications associated with hypertension in children/adolescents include the following: stroke, heart failure, and kidney disease.

- **Asthma** - asthma may refer to a chronic disease that typically causes the airways of the lungs to swell and/or narrow. Individuals suffering from childhood obesity are often at risk for asthma. Specific information regarding asthma in children/ adolescents may be found below.
  - Risk factors for asthma in children/adolescents include: overweight/obesity; a family history; history of allergic reactions; living in an area with high pollution; male sex.
  - The signs and symptoms of asthma include the following: coughing, wheezing, shortness of breath, and chest tightness. The following signs and symptoms may indicate an asthma-related emergency: an inability to breathe; cannot move due to an inability to breath; sucked-in abdomen when trying to breathe.
  - Individuals suffering from the aforementioned asthma-related emergency signs/symptoms should seek medical attention.
  - Complications associated with asthma in children/adolescents include the following: severe asthma attacks, reduced lung function, sleep disturbances, and fatigue.
- **Anxiety disorders** - an anxiety disorder may refer to a mental health disorder characterized by prolonged periods of persistent, excessive worry about a number of events or activities, which cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (note: within the context of an anxiety disorder, excessive worry may refer to worrying when there is

no specific reason/threat present or in a manner that is disproportionate to the actual risk of an event, activity, and/or situation). Specific information regarding anxiety disorders may be found below.

- There are many different types of anxiety disorders such as: generalized anxiety disorder, separation anxiety disorder, social anxiety disorder, and agoraphobia.
- **Generalized anxiety disorder** - generalized anxiety disorder may refer to a mental health disorder characterized by excessive anxiety and worry occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance), which is difficult to control and leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- **Separation anxiety disorder** - separation anxiety disorder may refer to a form of an anxiety disorder characterized by excessive worry and/or fear centered around being apart from select individuals.
- **Social anxiety disorder** - social anxiety disorder may refer to a form of an anxiety disorder characterized by irrational and excessive anxiety, worry, and/or fear regarding social situations.
- **Agoraphobia** - agoraphobia may refer to a form of an anxiety disorder characterized by fear and avoidance of places and situations which lead to feelings of panic, helplessness, being trapped, and/or embarrassment. Health care professionals should note that other more specific phobias may be present among patient populations.
- One of the most common forms or types of anxiety disorders is generalized anxiety disorder.
- The signs and symptoms of generalized anxiety disorder may include the following: excessive anxiety, excessive worry, restlessness, persistent feelings of being keyed up or on edge, easily fatigued, difficulty concentrating, mind feeling blank at times (i.e., mind going blank), irritability, muscle tension, and sleep difficulties.

- **Depressive disorders** - a depressive disorder may refer to a mental health disorder characterized by a persistent depressed mood and/or anhedonia, which ultimately causes significant interference in daily life (note: anhedonia may refer to a loss of

interest in previously enjoyable activities). Specific information regarding depressive disorders may be found below.

- There are many different types of depressive disorders such as: major depressive disorder, persistent depressive disorder, psychotic depression, and atypical depression.
- **Major depressive disorder** - major depressive disorder may refer to a form of depression that occurs most days of the week for a period of 2 weeks or longer leading to clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- **Persistent depressive disorder** - persistent depressive disorder may refer to a chronic form of depression.
- **Psychotic depression** - psychotic depression may refer to a form of depression that is accompanied by psychotic symptoms such as: hallucinations, delusions, and paranoia.
- **Atypical depression** - atypical depression is a condition characterized by periods of depression that are typically resolved by "positive events."
- One of the most common forms or types of depressive disorders is major depressive disorder.
- The signs and symptoms of major depressive disorder may include the following: depressed mood, anhedonia (a loss of interest in previously enjoyable activities), appetite changes, weight changes, sleep difficulties, psychomotor agitation or retardation, fatigue or loss of energy, diminished ability to think or concentrate, feelings of worthlessness or excessive guilt, and suicidality.

- **Sleep disorders** - the term sleep disorders may refer to a group of disorders that affect the way individuals sleep. Health care professionals should note that obese children/adolescents may suffer from a variety of different sleep disorders. Information regarding specific sleep disorders may be found below.
    - **Insomnia** - insomnia may refer to a sleep disorder characterized by an inability to fall asleep and/or stay asleep. Insomnia may also be characterized by early morning awakening (i.e., an individual awakens early in the morning or several hours early and is unable to resume sleeping).

Symptoms of insomnia include: daytime fatigue, low energy, difficulty concentrating, mood disturbances, and decreased performance at work or at school. Health care professionals should note that insomnia can be acute or chronic. Acute insomnia may refer to a form of short-term insomnia that typically lasts for a few days or a few weeks. Acute insomnia may also be referred to as adjustment insomnia because it typically results from events that require a life-style adjustment (e.g., starting a new job, starting school, and/or initiating a new schedule). Chronic insomnia may refer to a form of long-term insomnia that occurs at least three nights per week and lasts at least three months. Health care professionals should also note the following: insomnia, as well as other sleep disorders, may lead to sleep deprivation; sleep deprivation may refer to a lack of sufficient sleep (i.e., an individual does not get enough sleep).

- **Restless leg syndrome (RLS)** - restless leg syndrome (RLS) may refer to a sleep disorder characterized by an overwhelming urge to move the legs when they are at rest. Health care professionals should note that the overwhelming urge to move the legs, associated with RLS, may be different for each individual. In other words, the overwhelming urge to move the legs may be related to a different type of feeling. For example, the overwhelming urge to move the legs may be related to a bug crawling feeling on the legs or a sensation of liquid running through the legs. In essence, the RLS experience may be different for each patient. Health care professionals should also note that abnormalities in dopamine have been associated with RLS. Dopamine may refer to a neurotransmitter that sends messages between nerve cells.

- **Sleep apnea** - sleep apnea may refer to a sleep disorder characterized by interrupted breathing during sleep. Symptoms of sleep apnea include chronic snoring and daytime sleepiness. Factors that increase the risk of sleep apnea include: having a small upper airway; having a large tongue, tonsils, or uvula; being overweight or obese; having a recessed chin, small jaw, or a large overbite; having a large neck; smoking; alcohol use; and age. Health care professionals should note that individuals with sleep apnea may use a continuous positive airway pressure (CPAP) device. A CPAP device may refer to a medical device that uses mild air pressure to keep an individual's breathing airways open.

- **Substance use disorder** - substance use disorder may refer to a medical condition characterized by a cluster of symptoms that do not allow an individual to stop using legal or illegal substances such as: alcohol, marijuana, cocaine, and/or opioids (note: the presence of substance use disorders may be especially relevant to the care of adolescent patients suffering from childhood obesity). Specific information regarding substance use disorder may be found below.

    - Signs of alcohol abuse may include the following: slurred speech, an active tremor, shakiness, poor coordination, sweating, nausea, vomiting, memory loss, agitation, compulsive behavior, and cravings.

    - Some individuals suffering from substance use disorder may engage in binge drinking. Binge drinking may refer to a pattern of drinking that brings an individual's blood alcohol concentration (BAC) to 0.08 g/dl or above; the act of consuming 4 or more alcoholic beverages per occasion for women or 5 or more alcoholic beverages per occasion for men.

    - Some individuals suffering from substance use disorder may engage in heavy drinking. Heavy drinking may refer to the act of consuming 8 or more alcoholic beverages per week for women or 15 or more alcoholic beverages per week for men.

    - Signs of drug abuse may include: red eyes, dry mouth, drowsiness, involuntary eye movements, dilated pupils, nasal congestion, mouth sores, nausea, vomiting, slowed reaction time, sedation, dizziness, confusion, and needle marks (note: the signs of drug abuse may vary depending on the drug(s) of abuse).

    - Some individuals suffering from substance use disorder may misuse/abuse opioids such as prescription opioids, pharmaceutical Fentanyl, or illegal opioids such as heroin (note: prescription opioids may refer to opioids prescribed by a health care professional to treat pain; anyone who takes prescription opioids can become addicted to them; pharmaceutical Fentanyl may refer to a synthetic opioid, approved for treating severe pain; Fentanyl is 50 to 100 times more potent than morphine; heroin may refer to an illegal, highly addictive opioid drug processed from morphine and extracted from certain poppy plants).

    - An individual suffering from a substance use disorder involving opioids may be at risk for an opioid overdose, and related death. Health care

professionals should be aware of the following signs of an opioid overdose: constricted pupils, loss of consciousness, slow, shallow breathing, choking sounds, limp body, and pale, blue cold skin. Health care professionals should note the following: prescription opioid overdose deaths often involve benzodiazepines; benzodiazepines are central nervous system depressants used to sedate, induce sleep, prevent seizures, and relieve anxiety; examples of benzodiazepines include alprazolam, diazepam, and lorazepam. Health care professionals should also note the following: the medication naloxone, an opioid antagonist, may be used for the emergency treatment of a known or suspected opioid overdose; naloxone may be used to reverse the life-threatening respiratory depression associated with an opioid overdose; a variety of naloxone products (e.g., nasal spray, injection, auto-injection) are available to respond to a potential opioid overdose; individuals may possess naloxone products in case of an opioid overdose; health care professionals may be required or called upon to administer naloxone to patients suffering from a potential opioid overdose.

What are the complications typically associated with childhood obesity?

In addition to the aforementioned conditions, childhood obesity is also associated with a variety of complications. The most common complications typically associated with childhood obesity may be found below.

- **Low self-esteem** - individuals suffering from childhood obesity often have low self-esteem. Self-esteem may refer to an individual's subjective evaluation of his or her own value or worth. Health care professionals should note the following signs of low self-esteem: poor confidence; self-doubt; negative view of oneself; talking about oneself in a negative manner; negative outlook towards life; an inability to accept acknowledgement or positive feedback; outward feelings of shame; anxious mood; and depressed mood.

- **Relationship problems** - due to low self-esteem and or related contributing factors, individuals suffering from childhood obesity often have problems maintaining relationships with other individuals (e.g., individuals suffering from childhood obesity cannot sustain long-term romantic or platonic relationships with other individuals). Health care professionals should note that childhood obesity-associated anxiety, depression, and substance use disorder may contribute to or result from relationship problems.

- **Social isolation** - childhood obesity-associated low self-esteem and relationship problems often lead to social isolation (note: the term social isolation may refer to a lack of social connections that may impact an individual's health and quality of life). Health care professionals should note that childhood obesity-associated anxiety, depression, and substance use disorder may contribute to or result from social isolation.

- **Suicidal ideation** - the conditions associated with childhood obesity, and childhood obesity-associated low self-esteem, relationship problems, and social isolation may, collectively or independently, lead to suicidal ideation. Suicidal ideation may refer to thoughts of suicide and/or thoughts of planning suicide. Suicidal ideation may lead to a suicide attempt and/or suicide. A suicide attempt may refer to a non-fatal self-directed and potentially injurious behavior with any intent to die as a result of the behavior (note: a suicide attempt may or may not result in injury). Suicide may refer to a death caused by injuring oneself with the intent to die. Specific information regarding suicide may be found below.

    - Suicide is the 10th leading cause of death in the United States; suicide was responsible for more than 47,500 deaths in 2019, which is about one death every 11 minutes.

    - Suicide is the second leading cause of death for individuals ages 10 - 34, the fourth leading cause of death among individuals ages 34 - 54, and the fifth leading cause among individuals ages 45 - 54.

    - Suicide rates vary by race/ethnicity, age, and other factors. The highest suicide rates are among American Indian/Alaska Native and non-Hispanic White populations. Other Americans with higher than average rates of suicide are veterans, individuals who live in rural areas, and workers in certain industries and occupations, such as mining and construction. Young people who are lesbian, gay, or bisexual have a higher rate of suicidal ideation and behavior compared to their peers who are not lesbian, gay, or bisexual.

    - Suicide can be prevented. Suicide prevention is best achieved by a focus across the individual, relationship, family, community, and societal-levels and across all sectors, private and public.

    - Suicide prevention strategies may include the following: strengthening economic supports; strengthening access and delivery of suicide care;

creating protective environments; promoting connectedness; teaching coping and problem-solving skills; identifying and supporting people at risk; lessening harms and preventing future risk.

Section 1: Summary

Childhood obesity may refer to a condition in which a child or adolescent is significantly overweight for his or her age and height; a child/adolescent is well above the normal or healthy weight for his or her age and height. A health care professional can determine if a child/adolescent is obese by calculating his or her BMI-for-age. A child/adolescent is considered to be obese if his or her BMI is equal to or above the 95th percentile for children and teens of the same age and sex. The risk factors for childhood obesity include the following: diet/inadequate nutrition, sedentary lifestyle, lack of physical activity, family environment, stress, genetics, and medications. The most common conditions typically associated with childhood obesity include: type 2 diabetes, hypertension, asthma, anxiety disorders, depressive disorders, sleep disorders, and substance use disorder. Finally, the complications typically associated with childhood obesity include the following: low self-esteem, relationship problems, social isolation, and suicidal ideation.

Section 1: Key Concepts

- The fundamental cause of obesity is an energy imbalance between the calories consumed and the calories expended.
- A health care professional can determine if an individual is obese by calculating the his or her BMI-for-age.
- The reason a child's weight status is determined using an age- and sex-specific percentile for BMI is because children's body composition varies as they age and varies between boys and girls.
- A child/adolescent is considered to be obese if his or her BMI is equal to or above the 95th percentile for children and teens of the same age and sex.
- The risk factors for childhood obesity include the following: diet/inadequate nutrition, sedentary lifestyle, lack of physical activity, family environment, stress, genetics, and medications.

- The most common conditions typically associated with childhood obesity include: type 2 diabetes, hypertension, asthma, anxiety disorders, depressive disorders, sleep disorders, and substance use disorder.
- The complications typically associated with childhood obesity include the following: low self-esteem, relationship problems, social isolation, and suicidal ideation.

Section 1: Key Terms

Obesity - a condition characterized by abnormal or excessive fat accumulation, which may impair health

Body mass index (BMI) - a value derived from an individual's height and weight

Childhood obesity - a condition in which a child or adolescent is significantly overweight for his or her age and height; a child/adolescent is well above the normal or healthy weight for his or her age and height

Sedentary lifestyle - an inactive lifestyle characterized by extended periods of sitting or laying down, with little to no physical activity

Social media - any electronically driven application that enables individuals to create and share content for the purposes of virtual communication

Physical activity - any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level (U.S. Department of Health and Human Services, 2018)

Calorie - a unit of energy found in food and beverages; the amount of heat required at a pressure of one atmosphere to raise the temperature of one gram of water one degree Celsius

Prader-Will syndrome - a genetic disorder caused by a loss of function of specific genes on chromosome 15

Type 2 diabetes - a chronic condition that affects the way the body processes and uses insulin

Hyperglycemia - high blood sugar and/or a condition characterized by high blood sugar

Hypertension - high blood pressure; blood pressure consistently above a normal blood pressure level

Asthma - a chronic disease that typically causes the airways of the lungs to swell and/or narrow

Anxiety disorder - a mental health disorder characterized by prolonged periods of persistent, excessive worry about a number of events or activities, which cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

Excessive worry (within the context of an anxiety disorder) - worrying when there is no specific reason/threat present or in a manner that is disproportionate to the actual risk of an event, activity, and/or situation

Generalized anxiety disorder - a mental health disorder characterized by excessive anxiety and worry occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance), which is difficult to control and leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning

Separation anxiety disorder - a type of an anxiety disorder characterized by excessive worry and/or fear centered around being a part from select individuals

Social anxiety disorder - a type of an anxiety disorder characterized by irrational and excessive anxiety, worry, and/or fear regarding social situations

Agoraphobia - a form of an anxiety disorder characterized by fear and avoidance of places and situations that lead to feelings of panic, helplessness, being trapped, and/or embarrassment

Depressive disorder - a mental health disorder characterized by a persistent depressed mood and/or anhedonia, which ultimately causes significant interference in daily life

Anhedonia - a loss of interest in previously enjoyable activities

Major depressive disorder - a form of depression that occurs most days of the week for a period of 2 weeks or longer leading to clinically significant distress or impairment in social, occupational, or other important areas of functioning

Persistent depressive disorder - a chronic form of depression

Psychotic depression - a form of depression that is accompanied by psychotic symptoms such as: hallucinations, delusions, and paranoia

Atypical depression - a condition characterized by periods of depression that are typically resolved by "positive events"

Sleep disorders - a group of disorders that affect the way individuals sleep

Insomnia - a sleep disorder characterized by an inability to fall asleep and/or stay asleep

Acute insomnia (also referred to as adjustment insomnia) - a form of short-term insomnia that typically lasts for a few days or a few weeks

Chronic insomnia - a form of long-term insomnia that occurs at least three nights per week and lasts at least three months

Sleep deprivation - a lack of sufficient sleep; an individual does not get enough sleep

Restless leg syndrome (RLS) - a sleep disorder characterized by an overwhelming urge to move the legs when they are at rest

Dopamine - a neurotransmitter that sends messages between nerve cells

Sleep apnea - a sleep disorder characterized by interrupted breathing during sleep

Continuous positive airway pressure (CPAP) device - a medical device that uses mild air pressure to keep an individual's breathing airways open

Substance use disorder - a medical condition characterized by a cluster of symptoms that do not allow an individual to stop using legal or illegal substances such as: alcohol, marijuana, cocaine, and/or opioids

Binge drinking - a pattern of drinking that brings an individual's blood alcohol concentration (BAC) to 0.08 g/dl or above; the act of consuming 4 or more alcoholic beverages per occasion for women or 5 or more alcoholic beverages per occasion for men

Heavy drinking - the act of consuming 8 or more alcoholic beverages per week for women or 15 or more alcoholic beverages per week for men

Prescription opioids - opioids prescribed by a health care professional to treat pain

Pharmaceutical Fentanyl - a synthetic opioid, approved for treating severe pain

Heroin - an illegal, highly addictive opioid drug processed from morphine and extracted from certain poppy plants

Benzodiazepines - central nervous system depressants used to sedate, induce sleep, prevent seizures, and relieve anxiety

Self-esteem - an individual's subjective evaluation of his or her own value or worth

Social isolation - a lack of social connections they may impact an individual's health and quality of life

Suicidal ideation - thoughts of suicide and/or thoughts of planning suicide

Suicide attempt - a non-fatal self-directed and potentially injurious behavior with any intent to die as a result of the behavior

Suicide - a death caused by injuring oneself with the intent to die

Section 1: Personal Reflection Question

How can childhood obesity impact an individual's quality of life?

Section 2: Childhood Obesity Prevention

Childhood obesity can dramatically impact an individual's health, overall well-being, and quality of life. Fortunately, childhood obesity can be prevented. This section of the course will review methods to prevent childhood obesity. The information found within this section was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

Breastfeeding

- Breastfeeding may not initially come to mind when considering methods to prevent childhood obesity- however, research presented by the CDC suggests breastfeeding can help prevent childhood obesity. Specific information and recommendations regarding breastfeeding may be found below.
- Breastfeeding may refer to the act of providing a child with human breast milk for consumption.
- Breastfeeding is recognized as the best source of nutrition for most infants.
- Breastfeeding often results in improved infant health outcomes.

- The American Academy of Pediatrics recommends that infants be exclusively breastfed for the first 6 months with continued breastfeeding along with introducing appropriate complementary foods for 1 year or longer.
- The World Health Organization recommends exclusive breastfeeding up to 6 months of age with continued breastfeeding along with appropriate complementary foods up to 2 years of age or longer.
- Individuals should be encouraged to breastfeed their children for at least 1 year.
- To promote breastfeeding, health care professionals should provide new parents with breastfeeding support. Breastfeeding support may refer to any effort made to assist, guide, and/or facilitate breastfeeding.
- Breastfeeding support should include information on latching. Latching may refer to the process of securing a child to a nipple/breast. Health care professionals should note the following latching suggestions:

    1. Pull the child close to the nipple/breast in a manner that allows the child's chin and lower jaw to move into the nipple/breast first.
    2. When pulling the child close to the nipple/breast, aim the child's lower lip as far from the base of the nipple as possible to encourage the child to take a large mouthful of the breast.
    3. Tickle the child's lips or mouth with the nipple/breast to encourage the child to open his or her mouth.

- Breastfeeding support should include information on how to effectively hold a child during breastfeeding. Specific information regarding the more common types of breastfeeding holds may be found below.

    - **Cradle hold** - the cradle hold can be advantageous for infants who take to breastfeeding with ease. To engage in the cradle hold, an individual should hold the child with his or her head on the forearm, with the child's body facing the body of the individual breastfeeding. Health care professionals should note that the cradle hold is considered one of the most comfortable holds for a individual breastfeeding a child. Health care professionals should also note that the cradle hold is typically a standing breastfeeding hold.

- **Clutch hold** - the clutch hold, otherwise referred to as the "football hold", may be advantageous for individuals who had a C-section, have large breasts, have flat or inverted nipples, and/or experience a strong let-down reflex. The clutch hold may also be advantageous for infants that prefer to breastfeed in a more upright position. To engage in the clutch hold, individuals should hold the child at the side of their body, with the child laying on his or her back and with his or her head at the level of the nipple. The child's head should be supported by placing the palm of a hand at the base of the child's head. In essence, when engaging in the clutch hold, the individual should hold the child up to the nipple/breast, like they would hold a football, hence the alternative name for the clutch hold, "football hold." Health care professionals should note that the clutch hold is typically a standing breastfeeding hold.

- **Cross-cradle hold** - the cross-cradle hold, otherwise referred to as the transitional hold, may be advantageous for preterm infants, infants that have trouble obtaining milk from the breast, and/or infants that require extra head support. To engage in the cross-cradle hold, individuals should hold the child along their body with the head of the child in front of the nipple. The child's head should be supported by placing the palm of a hand at the base of the child's head. Health care professionals should note that when utilizing the cross-cradle hold, individuals should ensure the child is secure across their bodies. Health care professionals should also note that the cross-cradle hold is typically a standing breastfeeding hold.

- **Laid-back hold** - the laid-back hold, otherwise referred to as the straddle hold, may be advantageous for infants who take to breastfeeding with ease or for individuals that favor a breastfeeding hold that allows them to lie down. The laid-back hold may also be advantageous for individuals that prefer a relaxed or gentle/delicate breastfeeding approach. To engage in the laid-back hold, individuals should lie back on a pillow with the child's head just above and between the breasts. When an individual is in the previous position, she may gently guide the child to the nipple or simply allow the child to find the nipple on his or her own. Individuals should support the child's head, shoulders, and body as they approach the nipple and breastfeed.

- **Side-lying hold** - the side-lying hold, otherwise referred to as the side-lying position, may be advantageous for individuals who had a C-section and/or for individuals that would like to lie down and rest while breastfeeding. To engage in the side-lying hold, individuals should lie on their side with their child close to the nipple. When an individual is in the previous position she should gently guide the child to the nipple or simply allow the child to find the nipple on his or her own. Individuals should support the child as deemed appropriate/comfortable.

- Breastfeeding support should include information on breast pumps. Specific information regarding breast pumps may be found below.
    - The term breast pump may refer to any device designed and used for the removal of milk from a woman's breast.
    - Individuals should wash their hands with soap and water for 20 seconds before using and/or handling a breast pump.
    - Individuals should inspect a breast pump before using it. If the breast pump, or related parts, has any mold growing on it, the breast pump should be appropriately discarded.
    - For extra germ removal, individuals should sanitize breast pumps and breast pump parts at least once daily. Sanitizing is especially important if a child is less than three months old, was born prematurely, or has a weakened immune system due to illness or medical treatment .
    - When sanitizing breast pumps and breast pump parts, individuals should clean the breast pumps and breast pump parts first.
    - When sanitizing breast pumps and breast pump parts, individuals may use a microwave on manufacture recommended settings or a dish washer on manufacture recommended settings. Individuals may also simply boil the breast pump parts for a total of 5 - 10 minutes.
    - After sanitization is complete, individuals should allow the breast pump parts to air dry. Once the breast pump parts are clean, individuals should store the breast pump parts in a clean, protected area to prevent contamination during storage.

    - When cleaning the electrical unit for powered breast pumps, individuals should remember the following points of interest: electrical units, which hold the motor and batteries, should be wiped down with a clean paper towel or soft cloth after each use; the electrical unit should never be put into water or other liquids for cleaning; the electrical unit should also never be cleaned using a microwave sterilizer; some breast pump manufacturers make wipes just for cleaning breast pumps, which can make cleaning more convenient; even if the aforementioned wipes are used, breast pump parts that come into contact with breast milk should be cleaned using liquid dishwashing soap and warm water before pumping.
    - Individuals should also be aware of the following points of interest regarding breast pump tubing: when used correctly, breast pump tubing should not touch the pumped milk; individuals should keep a spare set of tubing on hand in case the original set gets soiled or damaged; if the tubing has water droplets in it at the end of a pumping session, disconnect the tubing from the flange/pump kit, but leave it attached to the pump, run the pump for a few more minutes until the tubing is dry.
    - Individuals should review breast pump instruction manuals for specific information regarding their breast pump.
- Breastfeeding support should include information on breast milk storage. Specific information regarding breast milk storage may be found below.
    - Freshly expressed breast milk may be stored at room temperature for up to 4 hours (note: expressed milk may refer to human breast milk that has been removed from the breast).
    - Freshly expressed breast milk may be stored in the refrigerator for up to 4 days.
    - Freshly expressed breast milk may be stored in the freezer for up to 12 months, although frozen breast milk is best 6 months after freezing.
    - When storing breast milk individuals should use breast milk storage bags or clean food-grade containers with tight fitting lids made of glass or plastic to store the expressed breast milk.
    - Individuals should never store breast milk in disposable bottle liners or plastic bags that are not intended for storing breast milk.

- Individuals should not store breast milk in the door of the refrigerator or freezer due to the potential for temperature changes when the refrigerator/ freezer door is opened.
- If freshly expressed breast milk will not be used within 4 hours of removal from the breast, it should be frozen right away to help to protect the quality of the breast milk.
- Individuals should freeze breast milk in small amounts such as 2 to 4 ounces or the amount that will be offered to a child at one feeding.
- When freezing breast milk, individuals should leave about an inch of space at the top of the container because the breast milk will expand as it freezes.
- When traveling, individuals may store breast milk in an insulated cooler bag with frozen ice packs for up to 24 hours.
- Individuals may thaw frozen breast milk in the refrigerator overnight. Individuals may also place the breast milk container in a container of warm water.
- Individuals should never thaw or heat breast milk in a microwave.
- Individuals should use breast milk within 24 hours of thawing in the refrigerator.
- Once breast milk is brought to room temperature after storing in the refrigerator or freezer, it should be used within 2 hours.
- Individuals should never refreeze breast milk once it has been thawed.
- Breast milk does not need to be warmed. It can be served to a child at room temperature or cold. However, individuals should note a child's preference to promote feeding.
- If infants prefer warm breast milk, individuals can warm breast milk by placing the container of breast milk into a separate container or a pot of warm water for a few minutes or by running warm, but not hot, tap water over the container for a few minutes.
- Individuals should not heat breast milk directly on the stove or in the microwave.

    - Individuals may test the temperature of the breast milk before feeding it to an infant by putting a few drops on the wrist. The breast milk should feel warm, not hot.
    - Before providing the breast milk to a child, individuals should swirl the breast milk to mix the fat, which may have separated.
    - If a child does not finish his or her breast milk, the leftover breast milk may still be used within 2 hours after the child is finished feeding. However, after 2 hours, leftover breast milk should be appropriately discarded.
- Breastfeeding mothers should be aware of the following: vitamin D is required for infants to support healthy bone development and to prevent rickets, a condition that causes weak or deformed bones; the American Academy of Pediatrics recommends breastfed and partially breastfed infants be supplemented with 400 IU per day of vitamin D beginning in the first few days of life.
- Breastfeeding mothers should be aware of the following: vitamin K is required to form blood clots and to stop bleeding; infants are born with very small amounts of vitamin K stored in their bodies, which can lead to serious bleeding problems like vitamin K deficiency bleeding (VKDB); the American Academy of Pediatrics recommends that all newborns receive a one-time intramuscular shot of vitamin K1 (phytonadione) at a dose of 0.5 to 1.0 milligrams shortly after birth. Health care professionals should note the following: the aforementioned dose of vitamin K1 is typically given during the birth hospitalization.
- Breastfeeding is natural - however, some new mothers may not be able to breastfeed their infants due to a variety of different factors. Details regarding contraindications to breastfeeding and related information may be found below.
    - Mothers should not breastfeed or feed expressed milk to infants diagnosed with classic galactosemia, which is a rare and dangerous genetic metabolic disorder.
    - Mothers who are infected with the human immunodeficiency virus (HIV) should not breastfeed nor provide expressed milk to their infants.
    - Mothers who have suspected or confirmed Ebola virus disease should not breastfeed nor provide expressed milk to their infants.

- Mothers using an illicit street drug, such as PCP (phencyclidine) or cocaine should not breastfeed nor provide expressed milk to their infants. With regards to the previous recommendation, health care professionals should note the following exception: narcotic-dependent mothers who are enrolled in a supervised methadone program and have a negative screening for HIV infection and other illicit drugs can breastfeed their infants.
- Mothers who are positive for human T-cell lymphotrophic virus type I or II or untreated brucellosis should not breastfeed nor provide expressed milk to their infants.
- Breastfeeding should not occur if the mother has active (infectious) untreated tuberculosis.
- Mothers should temporarily not breastfeed and should not feed expressed breast milk to their infants if the mother has an active herpes simplex virus (HSV) infection with lesions present on the breast. With regards to the previous recommendation, health care professionals should note the following: mothers can breastfeed directly from the unaffected breast if lesions on the affected breast are covered completely to avoid transmission.
- Mothers should temporarily not breastfeed and should not feed expressed breast milk to their infants if the mother is undergoing diagnostic imaging with radiopharmaceuticals.
- Mothers should temporarily not breastfeed, but can feed expressed breast milk to an infant, if they have an active varicela (chicken pox) infection that developed within the five days prior to delivery to the two days following delivery.
- Individuals without suspected or confirmed coronavirus disease 2019 (COVID-19) and who have not been in close contact with someone who has COVID-19 do not need to take special precautions when feeding at the breast or expressing milk (note: coronavirus disease 2019 (COVID-19) may refer to a respiratory illness that can spread from person to person).
- A child being breastfed by someone with suspected or confirmed COVID-19 should be considered as a close contact of a person with COVID-19, and should be quarantined for the duration of the lactating parent's

recommended period of home isolation and during their own quarantine thereafter.

- During a quarantine period, the breastfeeding individual should take precautions for feeding at the breast, expressing milk, and feeding from a bottle as if they have suspected or confirmed COVID-19.
- If the breastfeeding individual develops symptoms of COVID-19 or receives a positive viral test result, they should continue precautions, extending the time frame for taking such precautions to the end of their recommended period of home isolation.
- If the breastfeeding child develops symptoms of COVID-19 or receives a positive viral test result, breastfeeding individuals may choose to take precautions for those with suspected or confirmed COVID-19 while feeding at the breast, expressing milk, or feeding from a bottle. This includes wearing a mask during any close contact (i.e., less than 6 feet) with the child and cleaning their hands frequently (i.e., before and after touching a child) (note: due to the danger of suffocation, masks should not be placed on children younger than 2 years).

Adequate Nutrition

- To build on the previous prevention method, adequate nutrition can help prevent childhood obesity. Specific nutrition recommendations may be found below. The information found below was derived from materials provided by the U.S. Department of Health and Human Services (U.S. Department of Health and Human Services, 2020).
- Individuals should follow a healthy dietary pattern at every life stage (e.g., infancy, toddlerhood, childhood, adolescence) (note: the term healthy dietary pattern may refer to the combination of foods and beverages that constitutes an individual's complete dietary intake over time; a description of a customary way of eating or a description of a combination of foods recommended for consumption).
    - For about the first 6 months of life, exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable (note: the term formula

may refer to any human milk substitute intended for infant consumption). Provide infants with supplemental vitamin D beginning soon after birth.

- At about 6 months, introduce infants to nutrient-dense complementary foods. Introduce infants to potentially allergenic foods along with other complementary foods. Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.

- From 12 months through older adulthood, follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.

- Individuals should customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations (note: the term nutrient-dense foods may refer to the foods and beverages that provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium).

    - A healthy dietary pattern can benefit all individuals regardless of age, race, or ethnicity, or current health status.

- Individuals should focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

    - Nutritional needs should be met primarily from foods and beverages - specifically, nutrient-dense foods and beverages. Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

    - The core elements that make up a healthy dietary pattern include:

    - Vegetables of all types - dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables

    - Fruits, especially whole fruit

    - Grains, at least half of which should be whole grain

    - Dairy, including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
    - Protein foods, including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
    - Oils, including vegetable oils and oils in food, such as seafood and nuts
- Individuals should limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.
    - At every life stage, meeting food group recommendations, even with nutrient-dense choices, requires most of an individual's daily calorie needs and sodium limits. A healthy dietary pattern doesn't have much room for extra added sugars, saturated fat, sodium, or for alcoholic beverages. A small amount of added sugars, saturated fat, or sodium can be added to nutrient-dense foods and beverages to help meet food group recommendations, but foods and beverages high in these components should be limited.
    - **Added sugars** - less than 10 percent of calories per day; avoid foods and beverages with added sugars for those younger than age 2.
    - **Saturated fat** - less than 10 percent of calories per day starting at age 2.
    - **Sodium** - less than 2,300 milligrams per day, and even less for children younger than age 14.
    - **Alcoholic beverages** - drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Drinking less is better for health than drinking more. Individuals below the legal drinking age should not consume alcohol.
- Individuals ages 12 through 23 months should take in approximately 700 to 1,000 calories per day, depending on activity level.
- Individuals ages 2 through 8 years should take in approximately 1,000 to 2,000 calories per day, depending on activity level.
- Individuals ages 9 through 17 years should take in approximately 1,400 to 3,200 calories per day, depending on activity level.

Physical Activity

Physical activity can help prevent childhood obesity. Specific age-related physical activity recommendations may be found below. The information found below was derived from materials provided by the U.S. Department of Health and Human Services (U.S. Department of Health and Human Services, 2018).

- Physical activity may refer to any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level.

Physical Activity Recommendations for Preschool-Aged Children

- Preschool-aged children (note: the term preschool-aged children may refer to individuals ages 3 through 5 years) should be physically active throughout the day to enhance growth and development.
- Adult caregivers of preschool-aged children should encourage active play that includes a variety of activity types.

Physical Activity Recommendations for Children and Adolescents

- It is important to provide young people opportunities and encouragement to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety.
- Children and adolescents ages 6 through 17 years should do 60 minutes (1 hour) or more of moderate-to-vigorous physical activity daily.
- Most of the 60 minutes or more per day should be either moderate- or vigorous-intensity aerobic physical activity and should include vigorous-intensity physical activity on at least 3 days a week.
- As part of their 60 minutes or more of daily physical activity, children and adolescents should include muscle-strengthening physical activity on at least 3 days a week.
- As part of their 60 minutes or more of daily physical activity, children and adolescents should include bone-strengthening physical activity on at least 3 days a week.

Physical Activity Recommendations for Safe Physical Activity

- Individuals should understand the risks, yet be confident that physical activity can be safe for almost everyone.
- Individuals should choose types of physical activity that are appropriate for their current fitness level and health goals, because some activities are safer than others.
- Individuals should increase physical activity gradually over time to meet key guidelines or health goals. Inactive people should “start low and go slow” by starting with lower intensity activities and gradually increasing how often and how long activities are done.
- Individuals should protect themselves by using appropriate gear and sports equipment, choosing safe environments, following rules and policies, and making sensible choices about when, where, and how to be active.
- Individuals should be under the care of a health care professional if they have chronic conditions or symptoms. Individuals with chronic conditions and symptoms can consult a health care professional or physical activity specialist about the types and amounts of activity appropriate for them.

Adequate Sleep

Adequate sleep can help individuals remain active, engage in physical activity, and, subsequently, help prevent childhood obesity. Therefore, health care professionals should provide individuals with relevant sleep recommendations to help prevent childhood obesity. Specific sleep recommendations may be found below.

- Individuals 4 - 12 months old should sleep 12 - 16 hours per 24 hours (including naps).
- Individuals 1 - 2 years old should sleep 11 - 14 hours (including naps) per 24 hours.
- Individuals 3 - 5 years old should sleep 10 - 13 hours (including naps) per 24 hours.
- Individuals 6 - 12 years old should sleep 9 - 12 hours per 24 hours.
- Individuals 13 - 18 years old should sleep 8 - 10 hours per 24 hours.

- To ensure an adequate night sleep, individuals should establish consistent sleep patterns (e.g., go to bed at the same time each night and get up at the same time each morning, including on the weekends).
- To ensure an adequate night sleep, individuals should develop and maintain a relaxing bedtime routine (e.g., listening to relaxing music before bed; taking a warm bath).
- To ensure an adequate night sleep, individuals should reserve the bedroom and bed for sleep and/or sleep-related activities (note: reserving the bedroom and bed for sleep and/or sleep-related activities can also help individuals condition themselves to fall asleep and stay asleep).
- To ensure an adequate night sleep, individuals should seek natural light at appropriate times (note: individuals working to ensure an adequate night sleep should seek natural light [i.e., light from the sun] at appropriate times throughout the day, such as the morning and afternoon; natural light can help maintain a healthy sleep-wake cycle).
- To ensure an adequate night sleep, individuals should limit the amount of light in a sleep environment.
- To ensure an adequate night sleep, individuals should ensure their bedroom is quiet, dark, relaxing, and at a comfortable temperature.
- To ensure an adequate night sleep, individuals should avoid electronic device use before bedtime (e.g., stop using electronic devices, at least, 30 - 60 minutes before bedtime).
- To ensure an adequate night sleep, individuals should remove clocks and/or smartphones from sight when attempting to fall asleep and stay asleep (note: clocks and/or smartphones too close to the bed or in sight from the bed my lead to sleep related anxiety [e.g., an individual may continuously check his or her clock or smartphone while attempting to fall asleep, leading to an anxious feeling related to the time and/or information visible on the smartphone]).
- To ensure an adequate night sleep, individuals should turn off smartphones before bedtime.

- To ensure an adequate night sleep, individuals should avoid disruptions before bedtime (note: disruptions may lead to anxiety and/or agitation before bedtime, which could prevent an adequate night sleep).
- To ensure an adequate night sleep, individuals should avoid "going to bed too early" (i.e., when they are not tired).
- To ensure an adequate night sleep, individuals should avoid excessive fluid intake before bedtime (i.e., avoid consuming a large amount of liquid before bedtime).
- To ensure an adequate night sleep, individuals should avoid large meals, caffeine, and alcohol before bedtime.
- To ensure an adequate night sleep, individuals should avoid tobacco use.
- To ensure an adequate night sleep, individuals should avoid illicit drug use.
- To ensure an adequate night sleep, individuals should be aware of medications that can affect sleep.
- To ensure an adequate night sleep, individuals should be aware of supplements that can affect sleep.

Reduce/Prevent Stress

As previously mentioned, personal, school-related, and family and friend-related stress can lead to or contribute to childhood obesity. Therefore, individuals can help prevent childhood obesity by reducing and/or preventing stress. Additionally, reducing/ preventing stress can help individuals remain active, engage in physical activity, and achieve adequate sleep, all of which can help prevent childhood obesity. Specific stress reduction/prevention recommendations may be found below.

- Engage in physical activity (note: engaging in physical activity can help individuals create the following healthy cycle - reducing/preventing stress can help individuals remain active and engage in physical activity; remaining active and engaging in physical activity can help individuals reduce/prevent stress).
- Engage in meditation (note: meditation may be especially helpful for adolescents).
- Engage in yoga (note: yoga can help individuals remain active, engage in physical activity, and reduce/prevent stress).
- Engage in art projects (e.g., drawing; painting)

- Listen to relaxing music.
- Turn off smartphones and other electronic devices for extended periods of time.
- Limit daily social media exposure.
- Promote positive thinking (e.g., help children/adolescents focus on positive or productive feelings, emotions, and ideas)
- Help build and maintain a child's/adolescent's self-esteem (e.g., encourage children/adolescents to realize and understand their strengths, worth, and value).

Monitor height and weight

Finally, to help prevent childhood obesity, health care professionals should encourage parents and caregivers to monitor a child's/adolescent's height and weight (note: a child's height and weight can be used to determine his or her BMI-for-age). Specific recommendations/steps to accurately measure a child's height and weight may be found below.

Steps to Accurately Measure a Child's Height

1. Obtain a tape measure and an object with a flat surface, which will serve as a headpiece (e.g., a small piece of cardboard) (note: the tape measure will be used to measure the child's height).
2. Engage in hand hygiene (note: hand hygiene may refer to the process of cleaning hands in order to prevent contamination and/or infections). To effectively engage in hand hygiene, individuals should use an alcohol-based hand sanitizer or wash their hands with soap and water. If using an alcohol-based hand sanitizer, individuals should note the following: place the alcohol-based hand sanitizer on the hands and rub the hands together until the hands feel dry; the hand hygiene process with an alcohol-based hand sanitizer should take approximately 20 seconds. If using soap and water, individuals should note the following: wet the hands with warm water; apply a nickel- or quarter-sized amount of soap to the hands; rub the hands together until the soap forms a lather; counting rubbing for approximately 15 seconds; rinse the hands well under running water; use a paper towel or towel to dry the hands; use a paper towel/towel to turn off the faucet.

3. Identify a location to measure the child's height (e.g., a location with flat flooring and without a carpet that is against a flat wall without molding) (note: the same location should be used when measuring a child's height).
4. Ensure that the child's shoes are removed/instruct the child to remove his or her shoes.
5. Instruct the child to remove any head wear or hair ornaments.
6. Ensure that the child's hair is laying flat on his or her head (i.e., ensure that the child's hair is not sticking or bunched up in a manner that may interfere with accurately measuring the child's height).
7. Instruct the child to stand with his or her feet flat, together, and against the desired wall. Ensure the child's legs are straight, arms are at the sides, and shoulders are level.
8. Instruct the child to look straight ahead. Ensure the child's line of sight is parallel with the floor.
9. Gently place the headpiece on the crown of the child's head while the child stands with head, shoulders, buttocks, and heels touching the flat surface of the desired wall (note: the headpiece should rest on top of the child's head; depending on the overall body shape of the child or teen, all points may not touch the wall).
10. Ensure that the headpiece rests firmly on the child's head (note: the measurer's eyes should be at the same level as the headpiece).
11. Lightly mark where the bottom of the headpiece meets the wall.
12. Use a tape measure to measure from the base on the floor to the marked measurement on the wall to get an accurate height measurement.
13. Accurately record the child's height, to the nearest 1/8th inch or 0.1 centimeter, in a height and weight diary (note: a height and weight diary may refer to a document or book that may be used to chronicle/record a child's height and weight).
14. Engage in hand hygiene.

Steps to Accurately Measure a Child's Weight

1. Obtain a digital scale (note: a digital scale is the desired scale for accurately measuring a child's weight; classic bathroom scales that are spring-loaded should be avoided).
2. Engage in hand hygiene.
3. Identify a location to measure the child's weight (e.g., a location with flat flooring and without a carpet).
4. Instruct the child to remove his or her shoes and heavy clothing (e.g., sweaters; jeans).
5. Instruct the child to gently step onto the scale.
6. Instruct the child to stand with both feet in the center of the scale.
7. Observe the digital numbers on the scale. Note when the digital numbers on the scale stop moving, if applicable.
8. Record the weight to the nearest decimal fraction (e.g., 55.5 pounds or 25.1 kilograms) in a height and weight diary.
9. Instruct the child to gently step off of the scale. Repeat steps 1 - 9 if desired or deemed necessary to get the most accurate child weight.
10. Engage in hand hygiene.

Section 2: Summary

Childhood obesity can dramatically impact an individual's health, overall well-being, and quality of life. Fortunately, childhood obesity can be prevented. Methods that may be used to prevent childhood obesity include the following: breastfeeding, adequate nutrition, physical activity, adequate sleep, reducing/preventing stress, and monitoring a child's/adolescent's height and weight.

Section 2: Key Concepts

- Childhood obesity can be prevented.

- Methods that may be used to prevent childhood obesity include the following: breastfeeding, adequate nutrition, physical activity, adequate sleep, reducing/ preventing stress, and monitoring a child's/adolescent's height and weight.

Section 2: Key Terms

Breastfeeding - the act of providing a child with human breast milk for consumption

Breastfeeding support - any effort made to assist, guide, and/or facilitate breastfeeding

Latching - the process of securing a child to a nipple/breast

Breast pump - any device designed and used for the removal of milk from a woman's breast

Rickets - a condition that causes weak or deformed bones

Coronavirus disease 2019 (COVID-19) - a respiratory illness that can spread from person to person

Healthy dietary pattern - the combination of foods and beverages that constitutes an individual's complete dietary intake over time; a description of a customary way of eating or a description of a combination of foods recommended for consumption (U.S. Department of Health and Human Services, 2020)

Formula - any human milk substitute intended for infant consumption (U.S. Department of Health and Human Services, 2020)

Nutrient-dense foods - the foods and beverages that provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium (U.S. Department of Health and Human Services, 2020)

Preschool-aged children - individuals ages 3 through 5 years (U.S. Department of Health and Human Services, 2018)

Hand hygiene - the process of cleaning hands in order to prevent contamination and/or infections

Height and weight diary - a document or book that may be used to chronicle/record a child's height and weight

Section 2: Personal Reflection Question

How can health care professionals use the above methods to help individuals prevent childhood obesity?

Section 3: Weight Loss Recommendations

When caring for patients suffering from childhood obesity, health care professionals should consider weight loss recommendations. This section of the course will review specific weight loss recommendations. The information found within this section was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

Weight Loss Recommendations

- **Determine a patient's BMI-for-age** - first and foremost, health care professionals should determine a patient's BMI-for-age when working to help patient's loss weight. Health care professionals should note the following: BMI-for-age can be used to help determine if an individual is underweight, at a normal weight, overweight, or obese. Health care professionals should also note the following: to determine a patient's BMI-for-age, health care professionals should accurately measure a patient's height and weight; to effectively determine a patient's BMI-for-age, health care professionals may use BMI-for-age calculators provided by the CDC and other organizations.
- **Provide childhood obesity patient counseling and education** - health care professionals should provide patients suffering from childhood obesity, and their parents, with counseling and education. Childhood obesity patient counseling and education can help patients and their family members understand the complexities of childhood obesity and weight loss. Childhood obesity patient counseling and education can also help patients and their family members understand the severity of childhood obesity, and how it can negatively impact their immediate and long-term health, overall well-being, and quality of life. Health care professionals should note that childhood obesity patient counseling and education should include the following key elements: information on childhood obesity, information on BMI-for-age, information on childhood obesity risk factors, information on conditions typically associated with childhood obesity, information on the complications typically associated with childhood obesity, and weight loss information.

- **Set realistic weight loss goals** - when applying weight loss services to patients, it is important that health care professionals set realistic weight loss goals. Realistic weight loss goals can help patients stay motivated, build confidence, and, perhaps most importantly, commit to weight loss. Health care professionals should note the following weight loss goal: 1 to 2 pounds per week for a period of approximately 6 months or until a patient reaches a healthy weight based on BMI-for-age. Health care professionals should also note the following: a diet that is individually planned to help create a deficit of 500 - 1,000 kcal/day may be used to help patients achieve a weight loss of 1 to 2 pounds per week.

- **Promote physical activity, when applicable** - it should not be a surprise that health care professionals should promote physical activity when applying weight loss services to patients. Health care professionals should note the following: adequate physical activity can help patients lose weight and maintain a healthy weight; health care professionals should provide patients with age-related physical activity recommendations, when applicable.

- **Promote adequate nutrition, when applicable** - it should also not be a surprise that health care professionals should promote adequate nutrition when applying weight loss services to patients. Health care professionals should note that adequate nutrition can help patients loss weight and maintain a healthy weight. Health care professionals should also note the following: individuals should follow a healthy eating pattern across their lifespan; a healthy eating pattern may refer to a pattern or style of eating that includes the following elements: eating a variety of nutritious foods; obtaining sufficient calorie intake; and limiting foods that are high in saturated and trans fats, sodium, and added sugars.

- **Encourage patients to self-monitor their weight** - patients should be encouraged to self-monitor their weight in order to lose weight and maintain a healthy weight. The term self-monitor, as it relates to weight loss and maintenance, may refer to the act of observing and recording aspects of behavior related to weight, weight loss, and weight maintenance (e.g., calorie intake per day). Health care professionals should note the following: when applying weight loss services to children, health care professionals should encourage parents to monitor their child's weight.

- **Encourage patients and parents to maintain a height and weight diary** - as previously mentioned a height and weight diary may refer to a document or book that may be used to chronicle/record a child's height and weight (note: a child's

height and weight can be used to determine his or her BMI-for-age). Health care professionals should note that a height and weight diary may be used as a reference tool when reviewing a patient's height, weight, and BMI-for-age history. Health care professionals should also note the following: patients and parents should be aware of how to accurately measure height and weight.

- **Encourage patients to apply portion control** - some patients should be encouraged to apply portion control in order to lose weight and maintain a healthy weight. Portion control may refer to a method of moderating an individual's diet by determining the number of calories in each serving of food, and limiting consumption to fall below a predetermined number of calories to help individuals lose weight and maintain a healthy weight. Health care professionals should note the following: portion control can help individuals take an active role in their weight loss; portion control may be most beneficial to patients who are highly motivated to lose weight. Health care professionals should also note the following: when applying weight loss services to children, health care professionals should encourage parents to assist in portion control.

- **Encourage patients attempting to lose weight to seek support from family and friends** - individuals who successfully lose weight and keep it off typically rely on support from others to help maintain motivation, a healthier lifestyle, and continued weight loss/healthy weight management. Health care professionals should note that this recommendation may be especially relevant to young children who completely rely on their family for support.

- **Encourage patients attempting to lose weight to take part in support groups** - in addition to family and friends, health care professionals should consider recommending support groups to patients attempting to lose weight. Support groups can help patients suffering from childhood obesity make connections with other individuals who can help them maintain motivation, a healthier lifestyle, and continued weight loss/healthy weight management. Additionally, support groups can help patients suffering from childhood obesity avoid some of the complications associated with childhood obesity such as: low self-esteem, relationship problems, social isolation, and suicidal ideation. Health care professionals should note the following: various types of support groups exist; an individual may participate in one or more support group at a time to cope or manage his or her childhood obesity.

- **Assess waist circumference** - when applying weight loss services to patients, health care professionals should assess a patient's waist circumference. Waist circumference may refer to a measurement taken around an individual's abdomen at the level of the umbilicus, otherwise referred to as the belly button. Health care professionals should note the following: waist circumference should be used to assess patients' abdominal fat content; measuring waist circumference can help screen patients for possible health risks that come with being overweight and obese; if most of a patient's fat is around the waist rather than at the hips, then he or she may be at a higher risk for heart disease and type 2 diabetes; the aforementioned risk goes up with a waist size that is greater than 35 inches for women/greater than 40 inches for men. Health care professionals should also note the following: this recommendation may be especially relevant to older adolescent patients reaching adulthood. To effectively assess a patient's waist circumference, health care professionals should follow the steps found below.

  Steps for Measuring Waist Circumference

  1. Obtain a tape measure.
  2. Engage in hand hygiene and don required personal protective equipment (PPE). (note: protective equipment (PPE) may refer to equipment designed to protect, shield, and minimize exposure to hazards that may cause serious injury, illness, and/or disease [e.g., facemasks; gloves; gown]).
  3. Instruct the patient to stand up.
  4. Place a tape measure around the patient's middle section, just above the hip bones.
  5. Make sure the tape measure is horizontal around the patient's waist.
  6. Ensure the tape measure is snug around the patient's waist, but is not compressing the patient's skin.
  7. Instruct the patient to slowly breath in and out.
  8. Measure the patient's waist just after the patient breathes out.
  9. Effectively document relevant information.

- **Complete effective health care documentation** - health care documentation can be essential to patient weight loss, especially when it comes to recording and

accurately analyzing patients' height, weight, and BMI-for-age. Therefore, health care professionals should work to complete effective health care documentation. Health care documentation may refer to a digital or an analog record detailing the administration of health care to patients. If completed effectively, health care documentation can be used in daily practice by health care professionals to communicate vital patient information to other health care professionals in order to facilitate positive health care outcomes and to decrease the potential for negative health care outcomes, such as adverse events and patient mortalities. Effective health care documentation may be used as a method to review patient cases and to ensure all aspects of an individual patient's health care are noted and evaluated to maximize therapeutic outcomes.

In order for health care documentation to be considered effective, it must function as a viable form of communication, as well as a means to establish a detailed record of health care administration. There are many different forms of health care documentation - however, if health care professionals include specific characteristics in their documentation, they can ensure their documentation will be effective.

The first characteristics of effective health care documentation are objectivity and accuracy. Health care documentation should include objective information free of subjective judgment, bias, or opinion. Health care documentation should also be accurate - meaning it should include information which can be measured or verified by another individual.

Additional characteristics of effective health care documentation include clarity and completeness. Clarity, as it relates to health care documentation, may refer to a quality which enables multiple health care professionals to obtain meaning from recorded data and/or information relating to health care. Completeness, as it relates to health care documentation, may refer to a state where all of the necessary components and/or parts are present. Only when clarity and completeness are achieved can health care documentation be considered effective.

Finally, the information found within health care documentation should be readily accessible and available to all those who require it. Thus, health care professionals must include accurate times and dates of health care administration when completing their health care documentation to further its effectiveness. Health care professionals should note that completing effective health care

documentation can help health care professionals foster effective communication and ensure patients receive the care they require.

- **Identify patient syndromes/conditions that may contribute to or are associated with childhood obesity** - as previously mentioned, some syndromes/conditions may contribute to childhood obesity (e.g., Prader-Will syndrome). Health care professionals should work to identify patient syndromes/conditions that may contribute to childhood obesity when applying weight loss services to patients. Health care professionals should also note that some conditions, such as attention-deficit/hyperactivity disorder (ADHD) and autism spectrum disorder (ASD) are associated with childhood obesity (note: ADHD may refer to a type of brain disorder that is characterized by an ongoing pattern of inattention and/or hyperactivity-impulsivity, which interferes with functioning or development; ASD may refer to a complex developmental disorder that affects how an individual behaves, interacts with others, communicates, and learns). Additionally, health care professionals should note the following: research presented by the CDC suggests that children with ADHD are at increased risk for childhood obesity; research presented by the CDC suggests that approximately a third of children with autism are severely overweight.

- **Conduct medication reconciliations, when applicable** - as previously mentioned, some medications may lead to childhood obesity. Therefore, health care professionals should conduct medication reconciliations to identify patient medications that may be contributing or causing childhood obesity. A medication reconciliation may refer to a process of comparing the medications an individual is taking (or should be taking) with newly ordered medications (Joint Commission, 2021). Health care professionals should note the following information regarding medication reconciliations: medication reconciliations should address medication duplications, omissions, and interactions, and the need to continue current medications; the type of information health care professionals should use to reconcile medications include (among others) medication name, dose, frequency, route, and purpose; health care professionals should identify the information that needs to be collected in order to reconcile current and newly ordered medications and to safely prescribe medications in the future (Joint Commission, 2021). Health care professionals should also note the following: when conducting medication reconciliations, health care professionals should identify any medications associated with weight gain.

- **Work to prevent the transmission of the virus that cause coronavirus disease 2019 (COVID-19)** - health care professionals should work to prevent the transmission of the virus that causes COVID-19 while administering care to patients (note: coronavirus disease 2019 (COVID-19) may refer to a respiratory illness that can spread from person to person). Health care professionals should note the following: it is currently believed that the virus that causes COVID-19 is transmitted or spread through person to person contact (note: the term person-to-person contact may refer to the transmission of a communicable disease/illness from a host to a healthy person by way of body fluids [e.g., respiratory droplets, blood]); COVID-19 may spread between people who are in close contact with one another (within about 6 feet); COVID-19 may spread through respiratory droplets produced when an infected individual coughs or sneezes. Health care professionals should also note that they may work to prevent the transmission of the virus that causes COVID-19 by the following means: practicing effective hand hygiene, donning PPE (when appropriate), employing respiratory hygiene and cough etiquette measures, ensuring the safe handling of potentially contaminated equipment and surfaces in the patient environment, and by following safe injection practices.
- **Apply telehealth, when applicable** - health care professionals should apply telehealth, when providing weight loss service to patients suffering from childhood obesity, when applicable. Health care professionals should note the following: this recommendation is especially relevant due to the COVID-19 pandemic; telehealth services can help prevent the spread of infectious diseases, while providing health care professional with the means to effectively care for patients. Health care professionals should also note the following: telehealth services may be used to provide health care services to patients who may live in rural areas; telehealth services may be used to provide health care services to patients who lack reliable transportation; telehealth services may be used to provide health care services to patients with mobility limitations (CDC, 2020). Additional information regarding telehealth may be found below. The information found below was derived from materials provided by the CDC (CDC, 2020).
    - Telehealth may refer to the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health, and health administration.

- A term that is often associated with telehealth is telemedicine. Telemedicine may refer to the practice of medicine using electronic communication, information technology, or other means between a physician in one location, and a patient in another location, with or without an intervening health care professional. Health care professionals should note that telemedicine is a subset of telehealth, which specifically involves a clinician providing medical services via telehealth technology.
- Another term that is often associated with telehealth is eHealth. The term eHealth may refer to the use of information and communication technologies (ICT) for health and health care. Health care professionals should note that eHealth is also a subset of telehealth.
- A range of technologies may be used to support the delivery of telehealth such as: text messaging, smartphone apps for mobile phones, websites and computers, standard and wireless telephones, live and asynchronous video, virtual reality, and/or artificial intelligence (AI).
- The different categories or types of telehealth include the following:
    - **Live video** - live video, in the context of telehealth services, may refer to a live stream, two-way interaction between a patient and a health care professional(s) where both parties are communicating from different locations. Health care professionals should note that live video telehealth services, typically, occur in real time (note: the term real time may refer to the actual time during which a meeting, interaction, process, or event occurs; live).
    - **Store-and-forward** - store-and-forward may refer to a type of telehealth which involves the transmission of recorded health information (e.g., an x-ray or prerecorded video) through electronic communication systems to a health care professional who evaluates the information and provides a health care-related service to a patient(s). Health care professionals should note that store-and-forward telehealth services do not, typically, occur in real time.
    - **Remote patient monitoring** - remote patient monitoring may refer to the use of telehealth-related technologies to collect individuals' health care-related data in one location and electronically transmit it

to health care professionals in a different location for assessment and recommendations.

- **Mobile health** - mobile health may refer to the use of mobile communication devices (e.g., smartphones and tablets) to support health care, public health, and education. Health care professionals should note that mobile health applications can help individuals manage chronic conditions, track sleep patterns or fitness, schedule health care appointments, and/or send public health alerts via text message.

- The potential benefits of telehealth include the following:

    - **Telehealth has the potential to reach more individuals** - telehealth has the potential to reach more individuals compared to the traditional in-person programs. Telehealth is less restricted by distance, geography, and time barriers - potentially creating greater accessibility to individuals seeking health care.

    - **Patient convenience** - as previously alluded to, telehealth may be more convenient for patients. Essentially, telehealth can help patients avoid traveling to health care facilities, transportation costs associated with traditional in-person health care, any anxiety typically associated with traditional in-person health care, and long wait times. Additionally, telehealth offers patients the option to receive access to health care in locations where they are most comfortable.

    - **May be used to help prevent patient exposure to infectious diseases** - telehealth possesses the potential to help prevent patient exposure to infectious diseases. In essence, telehealth-related technologies can be a means to provide health care services to patients while keeping them separated, quarantined, and/or simply away from situations which may expose them to infectious agents. Health care professionals should note the following: the application of telehealth may be beneficial in times of infectious disease outbreaks and/or pandemics; in the context of infectious disease prevention, the application of telehealth may be beneficial to specific patient populations, such as individuals with compromised immune systems.

- **Timely access to locally unavailable health care services** - telehealth can potentially offer individuals timely access to vital health care services that may not be, otherwise, available in their local vicinity or area of residence. In other words, telehealth can potentially provide patients with increased access to health care specialists, health care services, and heath care programs which may not be available and/or offered to them in the traditional in-person health care capacity.

- **Increased communication** - telehealth-related technologies, such as specific mobile health applications, can allow patients and health care professionals the option to communicate health care information in a timely, effortless manner not offered in the traditional in-person health care capacity.

- **Allows for real-time interactions between patients and health care professionals** - live video telehealth services can provide patients and health care professionals the opportunity to communicate in real time in order to simulate and achieve the goals of traditional in-person health care interactions as well as share vital health care information. Health care professionals should note that live video telehealth technologies may be used by health care professionals to provide health care services to patients that may not have accessible access to health care due to their geographic location. Health care professionals should also note that live video telehealth technologies may be used by health care professionals to provide health care services to patients that may not be able to obtain health care in traditional in-person settings due to a physical disability or other health-related reason.

- **Allows for the transmission of recorded health information (e.g., an x-ray or prerecorded video)** - store-and-forward telehealth technologies can transmit recorded health care information (e.g., an x-ray or prerecorded video) through electronic communication systems to health care professionals who may use such information to evaluate and provide health care services to patients in need. Health care professionals should note that store-and-forward telehealth technologies may be used by health care professionals to provide health care services to patients that may not have accessible

access to health care due to their geographic location. Health care professionals should also note that store-and-forward telehealth technologies may be used by health care professionals to provide health care services to patients that may not be able to obtain health care in traditional in-person settings due to a physical disability or other health-related reason.

- **Remote patient monitoring** - telehealth can allow for remote patient monitoring. As previously highlighted, remote patient monitoring may refer to the use of telehealth-related technologies to collect individuals' health care-related data in one location and electronically transmit it to health care professionals in a different location for assessment and recommendations. Health care professionals should note the following: remote patient monitoring programs can collect a wide range of health care data from the point of care, such as: vital signs, weight, blood pressure, blood sugar, blood oxygen levels, heart rate, and electrocardiograms; remote patient monitoring may be beneficial in times of infectious disease outbreaks and/or pandemics; in the context of infectious disease prevention, the application of remote patient monitoring may be beneficial to specific patient populations, such as individuals with compromised immune systems; remote patient monitoring may also be beneficial to disabled individuals. Health care professionals should also note the following: remote patient monitoring may be used by health care professionals as a means to help reduce hospital admissions and hospital readmissions.

- **Allows access to mobile health** - as previously highlighted, mobile health may refer to the use of mobile communication devices (e.g., smartphones and tablets) to support health care, public health, and education. Mobile health applications may be used to help individuals manage chronic conditions, track sleep patterns or fitness, schedule health care appointments, and/or send public health alerts via text message.

- **Patient prescriptions may be ordered via telehealth technologies** - patient prescriptions may be ordered via telehealth technologies

based on information obtained by telehealth platforms and data collected via remote patient monitoring.

- **Potential reductions in health care costs** - evidence suggests that telehealth possesses the potential to reduce health care costs by increasing the efficiency of health care delivery, decreasing the costs associated with patient transportation, and by reducing hospital admissions and hospital readmissions.
- **Improved patient outcomes** - telehealth can potentially increase individuals' access to health care, allow for remote patient monitoring, and be used as a means to reduce hospital admissions and hospital readmissions as well as the transmission of infectious diseases - all of which can lead to improved patient outcomes.
- **Improved patient satisfaction** - finally, as previously alluded to, telehealth possesses the potential to make health care more convenient, flexible, and accessible - all of which can work to improve patient satisfaction.
- Specific laws regarding telehealth may vary by state. Therefore, a health care professional should be familiar with his or her particular state(s) of licensure's relevant telehealth-related laws.

- **Possess insight into the cultural trends that may be contributing to childhood obesity** - finally, when applying weight loss services to patients, it is important for health care professionals to possess insight into the cultural trends that may be contributing to childhood obesity. Health care professionals should note the following: possessing insight into the cultural trends that may be contributing to childhood obesity can help health care professionals identify patient specific patterns of behavior that may be leading to childhood obesity; possessing insight into the cultural trends that may be contributing to childhood obesity can help health care professionals relate to patients, which, subsequently, can help health care professionals connect with and reach patients suffering from childhood obesity to, ultimately, help them lose weight. Specific information regarding the cultural trends that may be contributing to childhood obesity can be found below.
    - **COVID-19 pandemic** - one of the first cultural trends that may come to mind when considering the current cultural trends contributing to childhood obesity is the COVID-19 pandemic. The COVID-19 pandemic may refer to the

world-wide health crisis involving the spread of the COVID-19 virus. The COVID-19 pandemic lead to shut downs, quarantines, social distancing, and alterations in individuals' social and health care-related patterns (note: social distancing, otherwise referred to as physical distancing, may refer to the act of keeping at least six feet apart from an individual(s) when interacting or engaging with an individual(s)). The aforementioned effects of the COVID-19 pandemic were recommended and required to help stop the spread of the COVID-19 virus, however, for many individuals, the effects of the COVID-19 pandemic lead to a more sedentary lifestyle, and ultimately, weight gain. With the effects of the COVID-19 pandemic in mind, health care professionals should provide patients with recommendations to help them safely socially reintegrate, decrease their COVID-19 pandemic-related sedentary lifestyle, and, ultimately, lose weight (e.g., engage in hand hygiene; utilize PPE; seek COVID-19 vaccination, when applicable) (note: research presented by the CDC indicates that obesity is a recognized risk factor for severe COVID-19).

- **Social media** - another cultural trend that may come to mind when considering the current cultural trends contributing to childhood obesity is the rise and use of social media. As previously mentioned, social media may refer to any electronically driven application that enables individuals to create and share content for the purposes of virtual communication. In recent years, social media has become interwoven into the U.S. culture, and has lead to a more sedentary lifestyle for many individuals. The social media-related sedentary lifestyle of many individuals has led to decreases in activity, physical activity, and, resulting, weight gain and childhood obesity. Research presented by the CDC suggests that individuals who used electric media/social media for more than six hours each day had a higher BMI when compared to those individuals who used electric media/social media for two hours or less each day. Health care professionals should note the following: health care professionals should identify patients who use social media for more than two hours a day; health care professionals should educate patients and patients' parents/caregivers about social media use and its potential impact on childhood obesity; health care professionals should recommend that patients use social media less than six hours per day.

- **Binge watching** - binge watching may refer to the act of viewing entertainment or informational content for a prolonged period of time; viewing multiple episodes, parts, or seasons of an entertainment-related program in succession over a period of several hours. Due to the rise of digital streaming providers (e.g., Netflix), more and more individuals, especially younger individuals, are spending hours binge watching digital streaming entertainment. Health care professionals should note the following: binge watching may contribute to a sedentary lifestyle, weight gain, and childhood obesity; research presented by the CDC indicates that excessive exposure of children to television and videos (viewing time) is associated with childhood obesity. Health care professionals should also note the following American Academy of Pediatrics (AAP) recommendations regarding binge watching and screen time: until 18 months of age limit screen use to video chatting along with an adult (for example, with a parent who is out of town); between 18 and 24 months screen time should be limited to watching educational programming with a caregiver; for children 2 - 5 years old, limit non-educational screen time to about 1 hour per weekday and 3 hours on the weekend days; for ages 6 years and older, encourage healthy habits and limit activities that include screens; turn off all screens during family meals and outings; learn about and use parental controls; avoid using screens as pacifiers, babysitters, or to stop tantrums; turn off screens and remove them from bedrooms 30 - 60 minutes before bedtime (American Academy of Pediatrics [AAP], 2020).

- **Gaming** - gaming may refer to the act of playing video games; playing video games for extended periods of time (note: the term gamer may refer to an individual who plays video games). Much like with binge watching, gaming may contribute to a sedentary lifestyle, weight gain, and childhood obesity. Health care professionals should note that excessive gaming may lead to gaming disorder, which is often associated with obesity. Health care professionals should also note the following information regarding a gaming disorder: gaming disorder is defined in the 11th Revision of the International Classification of Diseases (ICD-11) as a pattern of gaming behavior ("digital-gaming" or "video-gaming") characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences; for gaming disorder to be diagnosed, the behavior pattern

must be of sufficient severity to result in significant impairment in personal, family, social, educational, occupational or other important areas of functioning and would normally have been evident for at least 12 months; individuals who partake in gaming should be alert to the amount of time they spend on gaming activities, particularly when it is to the exclusion of other daily activities, as well as to any changes in their physical or psychological health and social functioning that could be attributed to their pattern of gaming behavior (World Health Organization [WHO], 2018). Additionally, health care professionals should note that the aforementioned AAP recommendations regarding screen time may also be applied to individuals who indentify as gamers and/or suffer from a gaming disorder.

Section 3: Summary

When caring for patients suffering from childhood obesity, health care professionals should consider weight loss recommendations. Weight loss recommendations include the following: determine a patient's BMI-for-age; provide childhood obesity patient counseling and education; set realistic weight loss goals; promote physical activity, when applicable; promote adequate nutrition, when applicable; encourage patients to self-monitor their weight; encourage patients and parents to maintain a height and weight diary; encourage patients to apply portion control; encourage patients attempting to lose weight to seek support from family and friends; encourage patients attempting to lose weight to take part in support groups; assess waist circumference; complete effective health care documentation; identify patient syndromes/conditions that may contribute to or are associated with childhood obesity; conduct medication reconciliations; work to prevent the transmission of the virus that cause COVID-19; apply telehealth, when applicable; and possess insight into the cultural trends that may be contributing to childhood obesity.

Section 3: Key Concepts

- When caring for patients suffering from childhood obesity, health care professionals should consider weight loss recommendations.

Section 3: Key Terms

Self-monitor (as it relates to weight loss and maintenance) - the act of observing and recording aspects of behavior related to weight, weight loss, and weight maintenance

Portion control - a method of moderating an individual's diet by determining the number of calories in each serving of food, and limiting consumption to fall below a predetermined number of calories to help individuals lose weight and maintain a healthy weight

Waist circumference - a measurement taken around an individual's abdomen at the level of the umbilicus, otherwise referred to as the belly button

Health care documentation - a digital or an analog record detailing the administration of health care to patients

Clarity (as it relates to health care documentation) - a quality which enables multiple health care professionals to obtain meaning from recorded data and/or information relating to health care

Completeness (as it relates to health care documentation) - a state where all of the necessary components and/or parts are present

Attention-deficit/hyperactivity disorder (ADHD) - a type of brain disorder that is characterized by an ongoing pattern of inattention and/or hyperactivity-impulsivity, which interferes with functioning or development

Autism spectrum disorder (ASD) - a complex developmental disorder that affects how an individual behaves, interacts with others, communicates, and learns

Medication reconciliation - a process of comparing the medications an individual is taking (or should be taking) with newly ordered medications (Joint Commission, 2021)

Person-to-person contact - the transmission of a communicable disease/illness from a host to a healthy person by way of body fluids

Telehealth - the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health, and health administration

Telemedicine - the practice of medicine using electronic communication, information technology, or other means between a physician in one location, and a patient in another location, with or without an intervening health care professional

EHealth - the use of information and communication technologies (ICT) for health and health care

Live video (in the context of telehealth services) - may refer to a live stream, two-way interaction between a patient and a health care professional(s) where both parties are communicating from different locations

Real time - the actual time during which a meeting, interaction, process, or event occurs; live

Store-and-forward - a type of telehealth which involves the transmission of recorded health information (e.g., an x-ray or prerecorded video) through electronic communication systems to a health care professional who evaluates the information and provides a health care-related service to a patient(s)

Remote patient monitoring - the use of telehealth-related technologies to collect individuals' health care-related data in one location and electronically transmit it to health care professionals in a different location for assessment and recommendations

Mobile health - the use of mobile communication devices (e.g., smartphones and tablets) to support health care, public health, and education

COVID-19 pandemic - the world-wide health crisis involving the spread of the COVID-19 virus

Social distancing (otherwise referred to as physical distancing) - the act of keeping at least six feet apart from an individual(s) when interacting or engaging with an individual(s)

Binge watching - the act of viewing entertainment or informational content for a prolonged period of time; viewing multiple episodes, parts, or seasons of an entertainment-related program in succession over a period of several hours

Gaming - the act of playing video games; playing video games for extended periods of time

Gamer - an individual who plays video games

Gaming disorder (defined in the 11th Revision of the International Classification of Diseases [ICD-11]) - a pattern of gaming behavior (“digital-gaming” or “video-gaming”) characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences (WHO, 2018)

Section 3: Personal Reflection Question

How can health care professionals use the above recommendations to safely and effectively help patients suffering from childhood obesity lose weight?

Case Study: Childhood Obesity

A case study is presented below to review the concepts found within this course. A case study review will follow the case study. The case study review includes the types of questions health care professionals should ask themselves when considering patients suffering from childhood obesity. Additionally, reflection questions will be posed, within the case study review, to encourage further internal debate and consideration regarding the presented case study and childhood obesity. The information found within the case study and case study review was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

Case Study

A 16-year-old male patient presents to a health care facility. During the initial screening process, the patient reports that he is not experiencing any COVID-19 symptoms. The patient also reports that he does not have a fever. Upon examination, a health care professional determines that the patient's BMI-for-age is in the 95th percentile. Upon questioning from a health care professional, the patient does not directly acknowledge his weight, but mentions that he has been feeling "down lately," and does not "really want to leave the house." Upon further questioning, the patient reveals that he "does not have many friends at school", but often spends "a lot of time" communicating with his "online friends." The patient also reports that he is a gamer, and wants to skip college to pursue professional gaming. During the conversation with the patient, the health care professional observes that the patient rarely makes eye contact and often keeps his head down when communicating. The health care professional also observes the patient cove ring his lower abdominal area with his forearms and hands. Towards the end of the conversation with the patient, the health care professional begins to discuss "some easy ways to lose weight." The patient responds positively, and appears to be interested in weight loss.

Case Study Review

What patient details may be relevant to childhood obesity?

The following patient details may be relevant to childhood obesity: the patient is 16 years old; during the initial screening process, the patient reports that he is not experiencing any COVID-19 symptoms; the patient reports that he does not have a fever; a health care professional determines that the patient's BMI-for-age is in the 95th percentile; the patient does not directly acknowledge his weight; the patient mentions that he has been feeling "down lately", and does not "really want to leave the house"; the patient reveals that he does not have many friends at school; the patient reveals that he often spends "a lot of time" communicating with his "online friends"; the patient reports that he is a gamer, and wants to skip college to pursue professional gaming; the health care professional observes that the patient rarely makes eye contact and often keeps his head down when communicating; the health care professional observes the patient covering his lower abdominal area with his forearms and hands; the health care professional begins to discuss "some easy ways to lose weight"; the patient appears to be interested in weight loss.

Are there any other patient details that may be relevant to childhood obesity; if so, what are they?

How are each of the aforementioned patient details relevant to childhood obesity?

Each of the previously highlighted patient details may be relevant to childhood obesity. The potential relevance of each patient detail may be found below.

<u>The patient is 16 years old</u> - the previous patient detail is relevant because the patient's age indicates the patient is an adolescent. Health care professionals should note the following: childhood obesity may refer to a condition in which a child or adolescent is significantly overweight for his or her age and height; a child/adolescent is well above the normal or healthy weight for his or her age and height.

<u>During the initial screening process, the patient reports that he is not experiencing any COVID-19 symptoms</u> - the previous patient detail is relevant to COVID-19 screening. Health care professionals should note the following related recommendation: screen and triage everyone entering a health care facility for signs and symptoms of COVID-19 (note: the signs/symptoms of COVID-19 may include: fever, chills, cough, shortness of breath, aches and pain, fatigue, headaches, nasal congestion, runny nose, sore throat, nausea, vomiting, and diarrhea).

The patient reports that he does not have a fever - the previous patient detail is relevant to COVID-19 screening. Health care professionals should note the following related recommendation: establish a process to ensure that everyone (e.g., patients, health care professionals, and visitors) entering a health care facility is assessed for COVID-19 signs/ symptoms (note: fever can be either a measured temperature ≥ 100.0°F or a subjective fever [e.g., patient reported fever]; individuals might not notice symptoms of a fever at the lower temperature threshold that is used for those entering a health care facility; individuals should be encouraged to actively take their temperature at home or have their temperature taken upon arrival).

A health care professional determines that the patient's BMI-for-age is in the 95th percentile - the previous patient detail is relevant because it indicates that the patient is suffering from childhood obesity. Health care professionals should note the following: for children and adolescents, BMI is age- and sex-specific and is often referred to as BMI-for-age; a child/adolescent is considered to be overweight if his or her BMI is equal to or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex; a child/adolescent is considered to be obese if his or her BMI is equal to or above the 95th percentile for children and adolescents of the same age and sex.

The patient does not directly acknowledge his weight - the previous patient detail is relevant because some overweight/obese children/adolescents may not directly acknowledge their weight due to shame or other related feelings/emotions. Health care professionals should be cognizant of such potential. Health care professionals should note the following: health care professionals should remain sensitive to the feelings/ emotions of patients suffering from childhood obesity; acknowledging the feelings/ emotions of patients suffering from childhood obesity can help health care professionals relate to patients, which, subsequently, can help health care professionals connect with and reach patients suffering from childhood obesity to, ultimately, help them lose weight.

The patient mentions that he has been feeling "down lately", and does not "really want to leave the house" - the previous patient detail is relevant because it may be an indication of the presence of a depressive disorder. Health care professionals should note the following: depressive disorders are associated with childhood obesity; health care professionals should work to identify patients potentially suffering from a depressive disorder.

The patient reveals that he does not have many friends at school - the previous patient detail is relevant because it may be an indication that the patient may be having

relationship problems and/or suffering from social isolation. Health care professionals should note the following: relationship problems and social isolation are associated with childhood obesity.

The patient reveals that he often spends "a lot of time" communicating with his "online friends" - the previous patient detail is relevant because it may indicate that the patient may be spending more than two hours per day communicating via social media. Health care professionals should note the following: the use of social media has lead to a more sedentary lifestyle for many individuals; the social media-related sedentary lifestyle of many individuals has lead to decreases in activity, physical activity, and, resulting, weight gain and childhood obesity; research presented by the CDC suggests that individuals who used electric media/social media for more than six hours each day had a higher BMI when compared to those individuals who used electric media/social media for two hours or less each day; health care professionals should identify patients who use social media for more than two hours a day; health care professionals should recommend that patients use social media for less than six hours per day.

The patient reports that he is a gamer, and wants to skip college to pursue professional gaming - the previous patient detail is relevant because it may indicate that the patient is engaging in excessive gaming. Health care professionals should note the following: gaming may contribute to a sedentary lifestyle, weight gain, and childhood obesity. Health care professionals should note that excessive gaming may lead to a gaming disorder, which is often associated with obesity.

The health care professional observe that the patient rarely makes eye contact and often keeps his head down when communicating - the previous patient detail is relevant because it may indicate the patient is suffering from low self-esteem. Health care professionals should note the following: low self-esteem is often associated with childhood obesity; health care professionals should work to identify patients suffering from low self-esteem by asking patients questions, and by observing patient behavior.

The health care professional observes the patient covering his lower abdominal area with his forearms and hands - the previous patient detail is relevant because it may indicate the patient is suffering from shame related to childhood obesity-associated low self-esteem. Health care professionals should note the following: often individuals suffering from childhood obesity-associated low self-esteem will display outward feelings of shame through specific language, body language, and/or actions; health care professionals should work to identify patients suffering from shame related to childhood obesity-associated low self-esteem.

The health care professional begins to discuss "some easy ways to lose weight" - the previous patient detail is relevant because it indicates the health care professional is attempting to apply weight loss services to the patient. Health care professionals should note the following: when initially attempting to apply weight loss services to patients suffering from childhood obesity (i.e., attempting to help a patient lose weight) it may be advantageous to frame wording regarding such an attempt in a positive manner to invite patients to listen and be receptive to weight loss services and weight loss; using words like "easy," "fun," and "exciting" can help health care professionals frame wording regarding weight loss services in a positive manner.

The patient appears to be interested in weight loss - the previous patient detail is relevant because it may indicate that the patient is receptive to and interested in losing weight. Health care professionals should note the following: when attempting to apply weight loss services to patients, health care professionals should work to determine a patient's level of interest in losing weight; often the first step to losing weight is an interest and commitment to weight loss.

What other ways, if any, are the previous patient details relevant to childhood obesity?

What weight loss recommendations should the health care professional consider when applying weight loss services to the patient highlighted in the case study?

The health care professional should consider all of the above weight loss recommendations. However, the specific weight loss recommendations that may be most beneficial to the patient, highlighted in the case study, include the following: set realistic weight loss goals; promote physical activity, when applicable; promote adequate nutrition, when applicable; work to prevent the transmission of the virus that cause COVID-19; possess insight into the cultural trends that may be contributing to childhood obesity.

How can the health care professional safely and effectively apply weight loss recommendations to the patient highlighted in the case study?

Conclusion

Childhood obesity has reached epidemic status in the U.S. Fortunately, childhood obesity can be prevented. Methods that may be used to prevent childhood obesity include the following: breastfeeding, adequate nutrition, physical activity, adequate sleep, reducing/preventing stress, and monitoring a child's/adolescent's height and weight. Finally,

health care professionals should consider weight loss recommendations when caring for patients suffering from childhood obesity.

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