Topic Brief

SPECIAL CONSIDERATIONS: PAIN IN SPECIFIC POPULATIONS

Although pain is a significant problem among all Americans, certain populations are more susceptible to and at greater risk for undertreatment, including children, minorities and those with advanced, life-limiting medical illness. Studies conducted in emergency departments suggest that women receive less attention in response to reports of severe pain than men. Also, due to military training and culture which teaches service members to be tough, and the complex nature of pain and post-traumatic stress, active duty military personnel and veterans tend to experience greater challenges achieving optimal pain relief than the civilian population.

In order to provide the most effective pain care possible and minimize pain-related morbidity, characteristics of vulnerable populations must be taken into consideration when performing pain assessment and implementing treatment plans. Health care professionals must also become aware of their own biases and understand that, regardless of demographic or social position, every individual with pain requires evaluation and treatment tailored to his or her specific clinical circumstances.

Children and Pain

Every child will experience pain at one time or another, whether it's from everyday bumps and bruises, or more chronic conditions such as headaches, gastrointestinal problems or diabetes. In fact, chronic pain affects up to 38 percent of children.[1]

Pediatric pain stems from a wide range of chronic conditions. For example:

- Each year, 1.5 million children have surgery, and many receive inadequate pain relief. In 20 percent of cases, the pain becomes chronic.[2]
- Of children aged 5 to 17 years, 20 percent suffer headaches.[2]
- More than one-third of children complain of abdominal pain lasting two weeks or longer.[3]
- Juvenille arthritis, which causes joint inflammation and aches, affects nearly 250,000 people under the age of 16 years.[4]
- About one in 1,000 U.S. children are cancer survivors and may have to deal with late and long-term effects of treatment (e.g., chronic fatigue and pain syndromes, nerve damage).[2]
- Recent evidence reveals reduced pain sensitivity is a common feature of children with autism and Asperger's syndrome.[2]
- Musculoskeletal pain can result from "growing pains," a normal occurrence in about 25 to 40 percent of children.[5]

COMMON CAUSES OF PAIN IN CHILDREN

- Abdominal pain (e.g., irritable bowel syndrome, ulcerative colitis)
- Headaches
- Scrapes and bruises
- Needlestick pain from immunizations (most children receive up to 24 immunizations by their 2nd birthday)
- Sports injuries (e.g., sprains, concussion, fractures)
- Chronic illnesses (e.g., sickle cell disease, type I diabetes)

According to the American Medical Association, children and infants are at increased risk of inadequate pain management, with age-related factors playing a major role. Physical and psychological changes that occur during childhood development can make understanding and managing pain in children significantly more complicated than treating pain in adults.

Many things affect the way a child experiences, communicates and responds to pain, including their:

- age
- beliefs and understanding of what is causing the pain
- ability to cope
- activity and anxiety levels
- previous experiences with pain and how they learned to respond
- support from parents and siblings
  - parental pain, stress and family functioning may also play a role in pediatric pain
  - preliminary data suggest that a mother's anxiety may be transmitted more strongly to her daughters than her sons, resulting in increased anxiety and pain in girls, but not boys.[6]

If pain is not addressed and treated early on, it can greatly impact a child's quality of life by interfering with mood, sleep, appetite, school attendance, academic performance, and participation in sports and other extracurricular activities. Furthermore, if unrelieved, childhood pain can pave the way to more pain later in life.[7] It is essential that health care providers

begin to approach pediatric pain so that appropriate strategies can be devised to target and reduce children's distress and pain-related disability.

Unaddressed pain can also result in significant financial stress for families who not only have to cover health care expenses, but who may also have to miss work to care for a sick child.[8]

Inadequate prevention and relief of pediatric pain are still widespread. Many obstacles exist to providing appropriate pain care to children and adolescents:[10]

- Beliefs and attitudes about the experience of pediatric pain.
- General lack of understanding about the best course of action for treating children in pain.
- Belief that pain should be treated less aggressively in children than adults.
- Pediatric pain management research has not been effectively translated into routine clinical practice.
- Pain in children with disabilities or other special health care needs may be more difficult to assess.

MYTHS AND TRUTHS ABOUT PAIN IN CHILDREN

MYTH: Children who are playing or sleeping must not be in pain.

TRUTH: Children cope with pain by distracting themselves, often through play. Sleep may also be a coping mechanism, and/or because they are exhausted.

MYTH: Young infants do not feel pain because their nervous systems are immature and unable to perceive and experience pain the way adults do.

TRUTH: Decades ago it was believed that a newborn couldn't feel pain, and surgery was routinely performed on infants without anesthetic. Today, we know that the central nervous system of a 26-week-old fetus has the capability of experiencing pain. There is strong evidence that children experience increasing anxiety and perception of pain with multiple procedures or painful stimuli.[8]

MYTH: Children can easily become addicted to pain medications.

TRUTH: Less than 1 percent of children treated with opioids become addicted.[9]

MYTH: Children will tell adults when they are having pain.

TRUTH: Children may not have the words to express pain (e.g., hurt, "ouch") or know to point to where it hurts. They may also be afraid of the consequences (e.g., extra visits to the pediatrician, shots, medicine). There are many tools available to assess pain in children. Adults need to recognize how children of different ages express pain in both behaviors and words.

Potential barriers to the effective treatment of pain in children[10]

- The myth that children, especially infants, do not feel pain the way adults do;
- Lack of routine assessment for the presence of pain in children;
- The idea that treating pediatric pain takes too much time and effort;
- Fears of adverse effects of analgesic medications, including respiratory depression and addiction;
- Differing personal values and beliefs of health care professionals about the meaning and value of pain in the development of the child (e.g., the belief that pain builds character).

WEB RESOURCES

American Pain Society
www.ampainsoc.org

International Association for the Study of Pain
Pain in Children
http://childpain.org

UCLA Pediatric Pain Program
www.mattel.ucla.edu/pedspain/home.php

American Academy of Pediatrics
www.aap.org

Whole Child Foundation
www.wholechildla.org

Gender and Pain

Although it has long been thought that women and men have similar pain experiences, recent research reveals significant differences in the way male and female brains process pain,[1] as well as in women's expression of pain and their responsiveness to analgesics and pain stimulus.[2,3]

Historically, women have been categorized as being emotional and overly sensitive; often influencing the way physicians assessed and managed their pain.[4] Even though research now shows that chronic pain conditions are generally more prevalent among women, they continue to be treated less aggressively for their pain than men.[5,6] And while women are more likely than men to seek treatment for their pain, they are less likely to receive it.[7]

Women report pain more often than men do and in more body regions, and they also tend to have more severe, recurrent and persistent pain, as well as a reduced pain threshold when compared with men.[3] However, despite their increased pain burden, women reportedly cope with pain better than men, possibly due to the fact that they experience pain more often throughout the course of their lives (e.g., menstruation, pregnancy and child birth, and other health issues specific to women).[3]

Female hormones are also likely to play a role in pain perception. Some pain conditions like migraine tend to vary with a woman's menstrual cycle, and many of the observed gender differences in pain appear to diminish following the reproductive years.[8]

Hormones May Influence Pain Experience

- Estrogen administration in women and in men can increase the incidence of chronic pain conditions.[9,10]
- Variations in women's estrogen levels, like those that occur during the menstrual cycle or during pregnancy, may regulate the brain's natural ability to suppress pain.[11]
- Some pain conditions such as migraine and fibromyalgia tend to fluctuate with a woman's menstrual cycle.
- Observed gender differences in pain appear to diminish following menopause.

Additionally, cultural conditioning may impact the expression of pain among women and men. As children, girls are more likely to be permitted to express pain and show emotion than boys, and attitudes about the social acceptability of gender and pain often carry into adulthood.[3]

Potential Sources of Gender Differences in Pain

Biological factors including:

- sex hormones
- genetics
- anatomical differences

Psychosocial influences including:

- emotion (e.g., anxiety, depression)
- coping strategies
- gender roles
- cultural conditioning
- health behaviors
- use of health care services

As advances in brain imaging technology provide further insights into gender variations in the experience of pain, it is becoming evident that different pain experiences among men and women will call for different approaches to pain management.

Ongoing research is essential to achieve:

- A better understanding of the biological and psychosocial factors that influence gender differences in pain
- A greater appreciation of the different health needs of men and women
- More effective and targeted pain treatments for women

PAIN DISORDERS WITH HIGHER PREVALENCE IN WOMEN

- Migraine
- Irritable bowel syndrome
- Fibromyalgia
- Chronic pelvic pain
- Interstitial cystitis
- Temporomandibular joint disorder (TMJ)
- Breast pain (mastalgia)
- Autoimmune disorders (e.g., lupus and chronic fatigue syndrome)
- Rheumatoid arthritis
- Osteoarthritis

WEB RESOURCES

International Association for the Study of Pain: Real Women, Real Pain
www.iasp-pain.org

National Institutes of Health: Gender & Pain
http://painconsortium.nih.gov/genderandpain/summary.htm

HealthyWomen.org
www.healthywomen.org/

Society for Neuroscience: Gender & Pain
www.sfn.org/index.cfm?pagename=brainBriefings_gender_and_pain

Older Adults and Pain

As we age, pain becomes a more common problem due to the high prevalence of chronic and progressive pain-producing conditions associated with aging. It is estimated that up to 50 percent of older persons living in the community have pain that interferes with normal function, and 59 to 80 percent of nursing home residents experience persistent pain.[1,2] Alarmingly, being older than 70 is the leading risk factor for inadequate pain management.[3]

Diagnosing and treating pain in older adults can be challenging. Those 65 and older often present with multiple medical and nutritional problems, take multiple medications and have many potential sources of pain. Older persons with dementia or communication problems are at even greater risk of undertreatment of pain due to difficulties communicating their pain.[4] Use of certain medications in older persons becomes problematic because of physiological changes.[5]

The most common cause of persistent pain in older adults is musculoskeletal in nature, typically from osteoarthritis or other bone, joint and spine disorders. According to the Arthritis Foundation, arthritis affects up to 80 percent of older adults, who report being fearful of recurring pain and disability. But the predilection for painful conditions does not mean that older adults need to live with uncontrolled pain. Quite the opposite; older adults can be effectively treated, and in so doing, pain-related morbidity — and even premature mortality — can and should be obviated.

COMMON PAIN CONDITIONS IN OLDER ADULTS

- Arthritis
- Lower back and neck pain; vertebral compression fractures from osteoporosis
- Abdominal pain (e.g., gallstones, bowel obstruction, peptic ulcer disease, abdominal aortic aneurysm)
- Cancer-related pain (symptom of disease or effect of nerve damage from treatments)
- Neuropathic pain due to diabetes, herpes zoster ("shingles"), kidney disease or other medical problems
- Muscle cramps, restless leg pain, itchy skin and sores due to circulatory problems or vitamin D deficiency
- Fibromyalgia
- Complex regional pain syndrome (CRPS), a neuropathic pain condition which can develop after an illness or injury and often affects the extremities
- Injuries, especially from falls

WEB RESOURCES

Handbook of Pain Relief in Older Adults — An Evidence-Based Approach
By Gloth III, F. Michael
http://www.amazon.com/Handbook-Pain-Relief-Older-Adults/dp/1607616173#reader_1607616173

American Medical Association
Assessing and Treating Pain in Older Adults
http://www.ama-cmeonline.com/pain_mgmt/module05/index.htm

American Geriatrics Society Foundation
The Management of Persistent Pain: Resources for Older Adults and Caregivers
http://www.healthinaging.org/public_education/pain

End-of-life and Pain

Pain control is one of the most challenging aspects of end-of-life care.[1] Terminal illness is often accompanied by severe pain, and a significant number of people suffer needlessly at the end-of-life. While the goal of end-of-life care should be making the terminally ill more comfortable, the health care system has been designed to take a curative approach to disease, rather than focusing on symptom relief.[2] Hospital research reveals that health care providers continue to inadequately treat pain, and tend to under-medicate terminal pain.

Individuals at end-of-life may have their pain undertreated for variety of reasons, including a lack of knowledgeable and experienced physicians and myths about addiction to pain medication, leading unnecessarily to patient and family suffering.[3]

Despite advances in research on end-of-life pain treatment, health care providers remain influenced by social and legal concerns, as well as misconceptions about medications including addiction, overdose, lasting side effects and diminished physical capacity.[5] The terminally ill and their families may also hesitate to begin using pain medications as they often associate such treatment with imminent death, thereby allowing patient suffering to worsen and continue.[4]

However, thorough and ongoing pain assessment, paired with well-designed and aggressive medication plans, as well as counseling for patients and their families can have a significant impact on pain relief and side effects among dying patients.[4,5]

END-OF-LIFE PAIN MAY BE EXACERBATED BY MANY OTHER SYMPTOMS INCLUDING:

- Dry mouth
- Nausea
- Water retention and swelling
- Lack of appetite
- Shortness of breath
- Mental distress and anxiety caused by fear or denial of impending death

Effective pain management at the end-of-life requires addressing the total pain experience, including physical causes, as well as interpersonal and spiritual pain.[3,4]

Pain associated with terminal illness often requires special treatment that can be best provided by hospice and palliative care programs available in many medical facilities. Hospice focuses on relieving symptoms and supporting patients who are nearing the end of their life, while palliative care is designed to provide comfort and pain relief at any time during a person's illness.[7] The goal of both programs is to alleviate physical, emotional, spiritual pain and suffering while respecting the dignity of the individual with a life-limiting illness.

"Suicidal wishes in patients with advanced disease are closely linked to unrelieved pain and to mood alterations such as depression and anxiety, which like pain, frequently respond to clinician treatment if the clinician identifies and addresses them."[2,6]

Essential Components of End-of-life Care[8]

- Continual assessment and management of pain and other physical symptoms
- Assessment and management of psychological and spiritual needs
- Helping the individual identify personal goals for pain treatment and end-of-life care
- Assessment of the person's support system

"When someone is dying, time is a luxury and wait-and-see is not an option. What matters most in the final days is that patients are free of crippling pain and unbearable suffering so that they can finish their lives in ways that bring comfort, peace, and completion. Concerns about lasting side effects or diminished physical capacity from months of using a drug become secondary to making a patient comfortable. No one has to die in pain."

— Dr. Scott Fishman

WEB RESOURCES

American Academy of Family Physicians: Challenges in Pain Management at the End of Life
www.aafp.org/afp/20011001/1227.html

American Pain Society: Treatment of Pain at the End of Life
www.ampainsoc.org/advocacy/treatment.htm

Discovery Health Center: End of Life Q&A with Dr. Scott Fishman
http://health.discovery.com/centers/pain/endoflife/endoflife.html

National Hospice and Palliative Care Organization
www.nhpco.org/i4a/pages/index.cfm?pageid=3254

Military/Veterans and Pain[1]

Pain is a major issue among military personnel and veterans, who are at heightened risk for injury and combat wounds. Although modern body armor and rapid evacuation to medical care is saving lives, there are more maimed and shattered limbs than ever before, with instances of amputation nearly doubling since before the Vietnam War. Hundreds of thousands of returning veterans will seek medical care and claim disability compensation for a wide variety of injuries and health problems they sustained during their tours of duty. It is estimated that the U.S. will be paying the cost of related medical care and disability claims for the next 40 years.

Veterans are more likely to experience psychological distress and other medical conditions, including post-traumatic stress disorder, depression, amputations, traumatic brain injuries, substance abuse and other injuries, which further complicate effective pain management.

COMMON PAIN CONDITIONS AMONG MILITARY MEMBERS

Post-traumatic stress disorder (PTSD) commonly affects soldiers returning from war, and is triggered by exposure to a situation or event that is or could be perceived as highly threatening to a person's life or those around him/her. PTSD may not emerge for years after the initial trauma.

It is a normal reaction to an abnormal situation. Not every service member will be diagnosed with a disorder, but most will experience some level of post-traumatic stress which can exacerbate pain conditions.

Chronic pain symptoms and PTSD frequently co-occur and may intensify an individual's experience of both conditions. Together, they result in fear, avoidance behaviors, anxiety and feelings of isolation.

Amputations have long been a tragic, unavoidable consequence of combat — "one of the most visible and enduring reminders of the cost of war," according to the Amputee Coalition of America. While there have been major advances in medicine, prosthetics and technologies that allow amputees to lead more independent lives, most of these patients continue to need specialized long-term or lifelong support. Managing wound, post-operative, phantom and stump pain is important to reduce suffering and improve quality of life.

A **traumatic brain injury** (TBI) is a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain and is a major cause of lifelong disability and death. Managing pain in veterans with TBIs may be complicated by memory lapses affecting medication management, difficulty organizing and following complicated and sometimes even simple pain management regimens, and difficulty learning new coping skills. Rehabilitation should incorporate efforts to relieve associated pain.

Veterans have significantly worse pain than the general public, and while military medical care is among the best in the world, there are still long-term problems and challenges with managing disability and chronic pain.

Military culture may also present a significant barrier to appropriate pain care. The persisting stigma around pain and pain treatment is particularly pronounced in the military, and pain is often perceived as a sign of weakness leading many individuals to choose to suffer in silence. Seeking mental health care for PTSD and depression, which so often accompany pain is important; pain is best managed when depression and PTSD are treated simultaneously.

A recent analysis found that the Veterans Health Administration (VHA) is already overwhelmed by the sheer number of returning veterans and the seriousness of their health care needs. Without increased staffing and funding for veterans medical care, it will not be able to provide quality care in a timely fashion.

However, after the 2009 passage of the military and veterans pain care laws, the Department of Defense and the Veterans Health Administration have begun to work together to improve pain care for service members. They jointly developed a pain management task force and issued a report: *Providing a Standardized DoD and VHA Vision and Approach to Pain Management to Optimize the Care for Warriors and their Families* outlining more than 100 recommendations to improve pain care within these health care systems. To find out more, visit http://www.health.mil/Libraries/HA_Policies_and_Guidelines/11-003.pdf.

Barriers to optimal pain management among veterans and military personnel may include fears about:

- No longer being physically capable of fulfilling their duties
- Being discharged and no longer having a sense of purpose
- Letting down or losing the respect of their peers
- Becoming addicted to pain medications
- Experiencing personality changes or problems with sexual relations due to pain medications
- Losing their benefits/pension if they acknowledge a pain condition

The U.S. Veterans Health Administration is instructing physicians and nurses who treat veterans to regard pain as a "fifth vital sign," to be routinely assessed along with blood pressure, pulse, temperature and respiration.

WEB RESOURCES

American Pain Foundation: Military/Veterans and Pain
www.painfoundation.org
www.exitwoundsforveterans.org

Amputee Coalition of America
www.amputee-coalition.org

Defense and Veterans Brain Injury Center
www.dvbic.org

Disabled American Veterans (DAV)
www.dav.org

U.S. Department of Veterans Affairs
www.va.gov

HOT TOPICS

Children & Pain

- Maternal anxiety influencing daughters' experience of pain
- Some neonatologists still do not treat pain in pre-term low birth weight babies because they "won't remember it"
- Investigations into "chronic daily headaches" in children
- Unraveling pediatric pain conditions and their impact into adulthood (e.g., whether complex regional pain syndrome in children leads to adult CRPS, whether irritable bowel syndrome in adolescents is this the same as IBS in adults)
- Complementary and alternative medicine: how and what is safe to use in children with chronic pain?
- Factors leading to pain-related disability in children (e.g., missing school, not sleeping, avoiding physical and social activities, not eating)

Gender & Pain

- Prevalent pain conditions in women (e.g., fibromyalgia, chronic pelvic pain)
- Interface of hormones and the pain experience
- Brain imaging, uncovering routes of pain transmission and tolerance
- Differential effects of medicines across genders
- Impact of chronic pain on sexuality and self-image

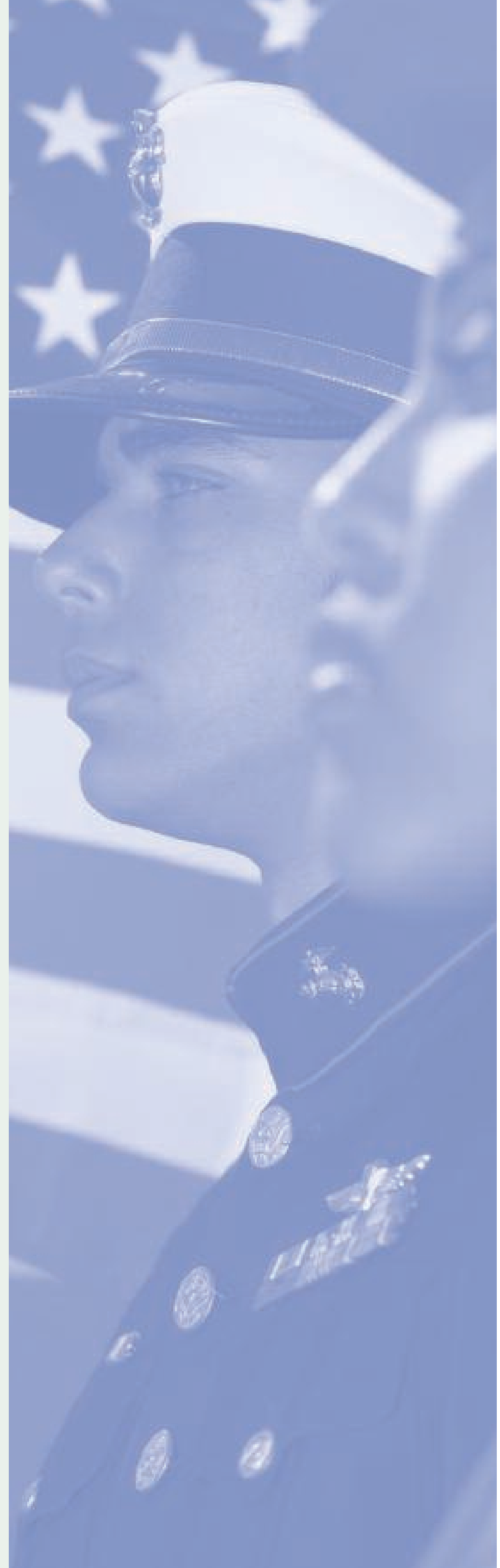
HOT TOPICS

Older Adults and End-of-life Care & Pain

- False belief that pain is an inevitable part of aging
- Vitamin deficiencies and musculoskeletal pain
- Limited consumer awareness of the options that exist other than traditional "acute care" approaches (e.g., doctor's office visits, ER visits, hospitalizations)
- Insufficient numbers of adequately trained and skilled health care professionals to manage the myriad issues confronting patients/families with advanced medical illness; limited number of providers with specialty in geriatrics
- Variability in delivery of hospice and palliative care services across the country
- Lack of clinical research data on pain care among elders

Military/Veterans & Pain

- DOD/VA responds to the Military and Veterans Pain Care Acts of 2009
- Emerging Options: Interdisciplinary approaches to pain care
- Acupuncture now being incorporated into treatment plans at Walter Reed Army Medical Center
- Competitive athletics as a form of therapy



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