

Understanding Abdominal Pain Assessment and Nursing Interventions

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Abstract:

Abdominal pain is a common and often complex symptom that can arise from various underlying conditions, ranging from benign gastrointestinal issues to serious medical emergencies. Effective assessment starts with a thorough patient history, including the onset, location, duration, intensity, and characteristics of the pain. Nurses must also pay attention to associated symptoms, such as nausea, vomiting, bowel changes, or fever. Physical examination techniques, including palpation and auscultation, help identify any abnormalities, while diagnostic tests such as blood work, imaging studies, and endoscopies may be necessary for a comprehensive evaluation. The use of standardized pain assessment tools can further aid in quantifying the patient's pain experience, which is essential for guiding treatment decisions. Nursing interventions for abdominal pain involve both immediate and long-term strategies aimed at alleviating discomfort and addressing the underlying cause. Initial interventions may include administering prescribed analgesics, positioning the patient for comfort, and providing reassurance. It is crucial for nurses to monitor vital signs and observe for any changes that could indicate worsening conditions. Education plays a vital role; nurses should instruct patients on recognizing red flags that might necessitate urgent care. Additionally, providing dietary guidance and encouraging fluid intake can be beneficial in managing pain related to specific gastrointestinal issues. Collaborative care with other healthcare professionals, including physicians and dietitians, ensures a comprehensive approach to managing abdominal pain.

Keywords: Abdominal pain, assessment, nursing interventions, patient history, symptoms, physical examination, pain assessment tools, analgesics, monitoring, education, dietary guidance, collaborative care.

Introduction:

Abdominal pain is a common and often distressing symptom experienced by individuals across various age groups and demographics. Its complexity arises from the diverse etiology, presenting challenges not only for patients but also for healthcare professionals. Abdominal pain can signal a wide range of medical conditions, from benign gastrointestinal discomfort to serious, life-threatening pathologies such as appendicitis, pancreatitis, or even an abdominal aortic aneurysm.

Therefore, a nuanced understanding of abdominal pain is essential for effective patient care, particularly within the nursing profession, which plays a pivotal role in assessment, intervention, and ongoing management [1].

The significance of abdominal pain in clinical practice extends beyond its frequency; it represents a crucial component of diagnosis, treatment, and patient education. Nurses are often the first healthcare professionals to encounter a patient with abdominal pain, making their assessment skills

critical. An effective nursing assessment must encompass a thorough understanding of the pain's location, quality, intensity, duration, associated symptoms, and potential triggers, which can offer vital clues to the underlying etiology. Additionally, the psychological and emotional facets of pain, often overlooked, play an integral role in a patient's overall experience and should be considered in any assessment protocol [2].

Given the widespread prevalence of abdominal pain, there exists a substantial body of literature exploring its causes, assessment techniques, and management strategies. Studies show that abdominal pain is not merely a physical symptom; it often intertwines with psychosocial factors, which can exacerbate the perception of pain and hinder recovery. For instance, anxiety and stress have been shown to heighten pain sensitivity and could potentially complicate treatment plans. In this regard, an understanding of the biopsychosocial model is imperative for nurses engaged in abdominal pain management, as it emphasizes the interconnection between biological, psychological, and social factors [3].

The nursing interventions for abdominal pain are as varied as its causes. They range from immediate actions, such as pain relief measures and supportive care, to educational initiatives aimed at promoting lifestyle changes and enhancing self-management strategies. Effective management often begins with pain assessment scales, which help quantify the patient's experience and guide subsequent interventions. Nurses utilize non-pharmacological methods, such as guided imagery, relaxation techniques, and heat application, alongside pharmacological interventions like analgesics or antispasmodics, depending on the clinical findings and the healthcare provider's directives [4].

Moreover, a well-structured nursing care plan is crucial for addressing not only the physiological aspects of abdominal pain but also the psychological distress it may cause. Education on trigger identification and avoidance strategies, dietary modifications, and the importance of follow-up care are all essential components. Nurses also serve as critical communicators, bridging the gap between patients and the broader medical team, thereby facilitating a coordinated approach to care [5].

Pathophysiology of Abdominal Pain:

Abdominal pain is a common clinical complaint that can arise from a variety of pathophysiological mechanisms. Understanding the underpinnings of abdominal pain is essential for healthcare professionals to accurately diagnose and treat patients.

The abdominal cavity houses numerous organs and systems crucial to digestion, metabolism, and overall bodily functions. Major organs located in the abdomen include the stomach, liver, pancreas, intestines, kidneys, and spleen, all situated within a complex arrangement of muscle, connective tissue, and vasculature. The abdominal wall consists of multiple layers—including skin, fascia, muscles, and peritoneum—that provide structural integrity and protection [6].

At the core of understanding abdominal pain is the concept of nociception, which refers to the sensory process that transmits pain signals to the brain. This process begins at nociceptors, specialized nerve endings dispersed throughout body tissues. When tissues are damaged or become inflamed, these nociceptors are activated by various stimuli, including mechanical (stretch, pressure), thermal (temperature changes), and chemical (inflammation-related mediators) factors [7].

Typically, nociceptors in the abdominal cavity are categorized into visceral and somatic nociceptors. Visceral nociceptors are found in the internal organs and primarily respond to stretching or ischemia. Their activation is often accompanied by vague, poorly localized pain, commonly described as cramping or dull. In contrast, somatic nociceptors are located in the walls of the abdominal muscles and skin; their activation produces sharp, localized pain, often exacerbated by movement or palpation [8].

The transmission of pain signals occurs through a complex network of peripheral nerves, primarily the vagus and splanchnic nerves, which carry signals from the abdominal viscera to the spinal cord and then to the brain. Once integrated in the central nervous system, these pain signals contribute to the perception of abdominal pain, which can be affected by multiple factors including emotional states, prior experiences, and overall health status [9].

Types of Abdominal Pain

Abdominal pain can be classified into various types based on its origin, duration, and characteristics. Understanding these distinctions is vital for determining the underlying pathophysiology [10].

1. **Acute and Chronic Pain:** Acute abdominal pain typically arises suddenly and may indicate a serious condition, while chronic abdominal pain is defined as pain lasting more than three months and often suggests a complex interplay of gastrointestinal and non-gastrointestinal factors.
2. **Visceral vs. Somatic Pain:** As previously mentioned, visceral pain originates from internal organs and is often diffuse and hard to localize. Somatic pain is more precise and can correlate with specific anatomical locations, often associated with conditions affecting the abdominal wall or peritoneum.
3. **Referred Pain:** Referred pain occurs when discomfort is felt in areas distant from the actual source of the problem. An example of this is shoulder pain experienced during gallbladder disease, as the diaphragm shares neuronal pathways with shoulder nerves [11].

Pathophysiological Conditions Associated with Abdominal Pain

Multiple disease processes can lead to the experience of abdominal pain, and understanding the associated pathophysiology is critical for diagnosis [12].

1. **Gastrointestinal Disorders:** Conditions such as appendicitis, pancreatitis, peptic ulcer disease, and diverticulitis can produce significant visceral pain. For instance, appendicitis involves inflammation and distension of the appendix, stimulating visceral nociceptors, which can lead to diffuse abdominal pain followed by localized pain in the right lower quadrant as the condition progresses.
2. **Infectious Conditions:** Infections such as gastroenteritis can lead to abdominal pain through mechanisms of inflammation, increased peristalsis, and mucosal irritation. Similarly, urinary tract infections can cause irritation in the lower abdomen or flank pain due to inflammation of the bladder or kidneys [12].
3. **Vascular Conditions:** Conditions affecting blood flow, such as mesenteric ischemia,

can cause severe abdominal pain due to inadequate perfusion to the intestines. The pain in this situation is often described as "out of proportion" to the physical examination findings and is primarily visceral in origin [13].

4. **Endocrine Disorders:** Disorders such as diabetic ketoacidosis and Addison's disease can cause abdominal pain that is often multifactorial in origin. In these cases, metabolic derangements lead to changes in gut motility and nerve function, contributing to pain.
5. **Psychosomatic Factors:** Psychogenic abdominal pain may arise due to emotional stress, anxiety, or depression. Individuals in these categories often exhibit viscerosomatic reflexes, which may heighten pain perception or lead to increased gut motility, amplifying discomfort [13].

Comprehensive Assessment Techniques:

Abdominal pain is a universal complaint that accounts for a significant number of medical visits annually. It can result from a myriad of causes ranging from benign to life-threatening. To effectively diagnose and treat abdominal pain, healthcare providers utilize a variety of comprehensive assessment techniques. These techniques encompass a thorough history taking, physical examination, diagnostic studies, and clinical reasoning [14].

History Taking: The Foundation of Assessment

The foundation of any assessment lies in a detailed patient history. A well-structured approach aids in the elucidation of the nature, onset, duration, location, intensity, and character of the pain. Key components of a pain history include:

1. **Location:** The exact site of the pain is often a useful indicator. For example, right upper quadrant pain could suggest conditions such as cholecystitis or hepatic issues, while pain in the right lower quadrant may indicate appendicitis or a gynecological issue [15].
2. **Onset and Duration:** Understanding when the pain started (acute vs. chronic) can indicate its urgency. Acute abdominal pain might suggest a surgical emergency, while chronic pain may indicate issues such as irritable bowel syndrome (IBS) or other gut disorders.

3. **Character:** Descriptors such as sharp, dull, cramping, burning, or intermittent can provide essential clues to the underlying pathology. For instance, cramping abdominal pain often relates to gastrointestinal conditions [15].

4. **Associated Symptoms:** Accompanying symptoms such as nausea, vomiting, diarrhea, fever, or changes in bowel habits are crucial. These can guide differential diagnoses—nausea and vomiting with abdominal pain could suggest obstruction or pancreatitis [16].

5. **Past Medical History:** Chronic conditions such as diabetes, liver diseases, or prior surgeries can predispose patients to particular abdominal issues. A thorough medical history also considers family and social backgrounds, which may reveal inherited conditions or lifestyle factors contributing to the patient's condition.

6. **Medications:** Current medications and any recent changes can be significant as certain drugs (e.g., nonsteroidal anti-inflammatory drugs or NSAIDs) may cause gastrointestinal side effects [16].

Physical Examination: A Systematic Approach

Following history taking, the physical examination is a vital component of abdominal pain assessment. Healthcare providers typically employ a structured four-step method involving inspection, palpation, percussion, and auscultation of the abdomen.

1. **Inspection:** Visual examination of the abdomen can reveal distension, asymmetry, scars from previous surgeries, or skin changes. Jaundice or signs of peritonitis (guarding, rigidity) might also be observable [17].

2. **Palpation:** This process encompasses light and deep palpation to identify tenderness, masses, or organomegaly. Specific areas are assessed for rebound tenderness or localized guarding, which can indicate inflammation or irritation of the peritoneum.

3. **Percussion:** This technique helps detect fluid (ascites), gas (bowel obstruction), or solid masses. Dullness might suggest the presence of fluid, while tympany can indicate gas accumulation.

4. **Auscultation:** Listening for bowel sounds provides insight into gastrointestinal motility. Increased bowel sounds can indicate hyperactivity

often associated with obstruction, while absent sounds may suggest a paralytic ileus [17].

Diagnostic Studies: Complementing Clinical Assessment

While history and physical examination often direct clinical suspicion, diagnostic studies provide critical support for confirmation and management of the underlying causes of abdominal pain. Common diagnostic approaches include:

1. **Laboratory Tests:** Basic blood tests, including complete blood count (CBC) and metabolic panels, can help detect infection, anemia, or electrolyte imbalances. A comprehensive metabolic panel can indicate liver or kidney function, while specific enzyme tests can help diagnose pancreatitis (lipase) or gallbladder issues (alkaline phosphatase) [18].

2. **Radiological Investigations:** Imaging serves a vital role in visualizing structural abnormalities. Ultrasound is useful for gallbladder diseases or gynecological concerns, while computed tomography (CT) scans offer detailed images of the abdominal organs and can detect appendicitis, diverticulitis, or tumors [18].

3. **Endoscopy:** In cases where gastrointestinal bleeding or malignancy is suspected, endoscopic procedures can be invaluable. Upper gastrointestinal endoscopy allows visualization of the esophagus, stomach, and duodenum, while colonoscopy evaluates the large intestine.

4. **Specialized Tests:** Additional tests such as abdominal X-rays can reveal obstructions or perforations, while specific tests like H. pylori testing or stool studies can provide insights into gastritis or infectious diarrhea [18].

Clinical Reasoning and Diagnostic Skills

In addition to employing various assessment techniques, the ability to synthesize data is paramount in clinical practice. Clinicians must develop a differential diagnosis based on the history and findings from the examination and studies. This process requires not only knowledge but also critical thinking and pattern recognition [19].

Understanding common pathologies associated with different age groups and risk factors allows for a targeted approach. For instance, older patients may

present with atypical symptoms for conditions like myocardial infarction, which could be mistaken for gastrointestinal complaints [19].

Utilization of Pain Assessment Tools:

Abdominal pain is one of the most common complaints in both clinical and emergency settings, with a wide range of etiologies that can range from benign to life-threatening conditions. Given its pervasive nature, effective assessment of abdominal pain is vital for guiding diagnosis, treatment, and management. Abdominal pain assessment tools are systematic strategies, questionnaires, scales, or protocols developed to facilitate healthcare professionals in evaluating the severity, nature, and potential causes of abdominal discomfort.

The assessment of abdominal pain serves several critical purposes in healthcare. Firstly, it aids in establishing a differential diagnosis, enabling practitioners to differentiate between various causes of pain ranging from gastrointestinal disorders, such as appendicitis and pancreatitis, to gynecological issues or urinary tract infections. Secondly, a thorough pain assessment contributes to appropriate clinical decision-making; it can dictate whether immediate interventions such as surgery, further diagnostic imaging, or referral to a specialist are necessary. Additionally, effective pain assessment is essential in managing patient expectations and improving overall satisfaction with care—two factors increasingly highlighted in the realm of patient-centered healthcare [20].

Types of Abdominal Pain Assessment Tools

Abdominal pain assessment tools can be categorized into qualitative and quantitative approaches.

1. **Qualitative Assessment Tools:** These tools primarily gather descriptive information about the patient's experience of pain. Common qualitative assessment methods include:

- **Patient History:** A detailed patient history is fundamental in understanding the onset, duration, character, and location of pain. It also considers associated symptoms such as nausea, vomiting, changes in bowel habits, or urinary symptoms.

- **Pain Diagrams:** These allow patients to mark the location and nature of their pain,

providing visual representation that can assist in diagnosis.

- **Mneumonics and Scales:** Methods like the OPQRST acronym (Onset, Provocation, Quality, Radiation, Severity, Time) can be employed to guide thorough patient history taking [21].

2. **Quantitative Assessment Tools:** These tools measure pain intensity or severity using numerical or categorical scales. Some widely used tools include:

- **Numeric Rating Scale (NRS):** Patients rate their pain from 0 (no pain) to 10 (worst pain imaginable), providing a simple and effective measure of pain intensity.

- **Visual Analog Scale (VAS):** This scale consists of a line, typically 10 centimeters long, with endpoints labeled "no pain" and "worst possible pain." Patients mark their level of pain along the line for a quantitative score.

- **Faces Pain Scale-Revised (FPS-R):** Especially useful in pediatric populations, this tool uses pictorial representations of facial expressions to help patients express their pain level [22].

Application in Clinical Practice

Abdominal pain assessment tools provide a structured approach that enhances clinical practice in several ways:

1. **Facilitating Diagnosis:** By employing systematic assessment tools, clinicians can more effectively categorize pain, which aids in narrowing down potential diagnoses. This structured assessment also promotes standardized care across different practitioners and settings [23].

2. **Monitoring Pain Progression:** Regular use of assessment tools allows for tracking changes in pain levels or patterns over time, offering valuable insights into the effectiveness of treatments and guiding future management strategies [24].

3. **Enhancing Communication:** Standardized tools foster better patient-clinician communication. Patients who clearly articulate their pain levels and experiences can significantly reshape the diagnostic process, facilitating more targeted and personalized care.

4. **Supporting Research and Quality Improvement:** Abdominal pain assessment tools can serve as reliable endpoints in clinical research studies, contributing to a deeper understanding of pain characteristics, outcomes, and treatment efficacy. Moreover, implementing these tools in clinical practice can inform quality improvement initiatives, ensuring that healthcare systems prioritize comprehensive pain assessment [25].

Considerations for Effective Use

While abdominal pain assessment tools are valuable, clinicians must be aware of certain considerations to ensure their effective use:

1. **Cultural Sensitivity:** Understanding that pain expression varies across cultures is essential. Clinicians should be trained to recognize and accommodate cultural differences in pain reporting to avoid miscommunication or under-treatment [26].
2. **Patient-Specific Factors:** Every patient is unique, which requires a tailored approach to pain assessment. Factors such as age, gender, language proficiency, and mental health status can influence a patient's ability to accurately describe their pain.
3. **Limitations of Tools:** No assessment tool is perfect. Clinicians should consider the context when interpreting results; for instance, some patients may underreport their pain due to fear of invasive procedures, while others may exaggerate pain to seek attention or medications [26].
4. **Incorporating Technology:** Technology, such as mobile health applications, may provide innovative platforms for reporting pain and conducting assessments. Clinicians should be open to integrating these tools to meet patient's needs dynamically [27].

Nursing Interventions for Pain Management:

Abdominal pain is a common clinical symptom that can result from a wide array of conditions, ranging from benign to life-threatening. Its management is crucial for patient comfort and overall care. Nurses play a vital role in assessing, monitoring, and implementing interventions to alleviate abdominal pain [28].

Before implementing interventions, it is essential to understand the underlying causes of abdominal pain. Conditions such as appendicitis, which may require surgical intervention; gastrointestinal disorders (like

irritable bowel syndrome or ulcerative colitis); and even conditions affecting other systems (such as pancreatitis) can lead to significant pain. Validating the underlying cause aids in tailoring appropriate nursing interventions and anticipatory guidance.

Abdominal pain can be classified based on its characteristics and underlying causes. It can be acute or chronic, localized or diffuse, and can present with additional symptoms such as nausea, vomiting, diarrhea, or fever. Nurses should consider these classifications when evaluating patients to guide the development of a comprehensive care plan [28].

Assessment Techniques

Effective assessment is the cornerstone of pain management. To adequately treat abdominal pain, nurses should conduct a thorough pain assessment that includes:

1. **Pain History:** Nurses should gather details concerning the pain's onset, duration, intensity, quality (sharp, dull, cramping), and location. Using standardized pain scales, such as the Numerical Rating Scale (NRS) or the Wong-Baker FACES scale, can help quantify pain levels and gauge effectiveness of interventions over time [29].
2. **Physical Examination:** A focused abdominal examination — including inspection, palpation, percussion, and auscultation — helps to identify signs of distress or specific abnormalities that might indicate a serious condition. Observing for signs such as tenderness, guarding, or rigidity can provide important clues regarding the underlying cause of pain [29].
3. **Vital Signs Monitoring:** Since abdominal pain can be associated with conditions that may cause changes in vital signs, routine monitoring is crucial. Elevated heart rates or changes in blood pressure may indicate the severity of the situation and the need for immediate intervention [30].
4. **Laboratory and Diagnostic Tests:** Nurses may assist in coordinating laboratory tests, imaging, and other diagnostic measures. Understanding these results can aid in refining the nursing interventions tailored to the patient's unique situation [30].

Nursing Interventions for Pain Management

Having gathered all necessary information and established a clear understanding of the patient's condition, nurses can implement a variety of

interventions. These interventions can be broadly categorized into pharmacological and non-pharmacological strategies [31].

Pharmacological Interventions

1. **Analgesics:** Administering prescribed analgesics is often the first-line approach to managing abdominal pain. Nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen can relieve mild to moderate pain. In cases of moderate to severe pain, opioids such as morphine or hydromorphone may be prescribed under strict adherence to protocols, with careful monitoring for potential side effects such as constipation or respiratory depression [32].

2. **Adjunct Medication:** Depending on the etiology, adjunct medications such as antacids, antiemetics, or muscle relaxants may be useful for addressing specific symptoms associated with abdominal pain.

3. **Patient Education:** Educating patients about medication regimens, possible side effects, and the importance of adherence is vital. Providing clear instructions regarding when to take medications, upcoming procedures, or dietary recommendations can enhance pain management [32].

Non-Pharmacological Interventions

1. **Positioning:** Helping patients find a comfortable position can lead to significant pain relief. Some may find lying on their side with knees drawn to the chest helpful, while others may prefer to sit upright [33].

2. **Heat Application:** Application of warm compresses or heating pads can provide symptomatic relief from cramping and discomfort associated with abdominal pain. Care should be taken to avoid burns, and the duration of heat application should be monitored.

3. **Relaxation Techniques:** Teaching relaxation techniques such as deep breathing exercises, guided imagery, or mindfulness can help in managing pain perception and promoting a feeling of control. These methods may assist in reducing the psychological impact of pain [33].

4. **Nutritional Modifications:** Depending on the identified etiology of pain, dietary recommendations may alleviate symptoms. For

example, a low-fiber diet may be suitable for patients experiencing bowel obstruction, whereas a high-fiber diet may be beneficial for those with constipation-related pain. Nurses can work closely with dietitians to ensure optimal nutritional support.

5. **Encouraging Mobility:** Early mobilization allows for improved bowel function and can mitigate discomfort. Nurses should encourage patients to engage in gentle movements or ambulation as tolerated, which has been linked to increased digestion efficiency and pain management [34].

Continuous Evaluation and Communication

An essential component of managing abdominal pain is ongoing assessment and re-evaluation of both pain levels and the effectiveness of interventions. Regularly scheduled pain assessments and patient feedback should guide future interventions and adjustments. Additionally, clear communication among the nursing team and other multidisciplinary professionals, such as physicians, dietitians, and physical therapists, is paramount to ensure a coordinated and holistic approach to care [35].

Patient Education and Self-Management Strategies:

Abdominal diseases encompass a wide array of conditions affecting the gastrointestinal tract and surrounding organs, including the stomach, intestines, liver, gallbladder, and pancreas. Common abdominal diseases include irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), gastroesophageal reflux disease (GERD), peptic ulcer disease, and gallstones. These conditions can significantly impact a patient's quality of life and may lead to chronic health issues if not addressed adequately. Consequently, effective patient education and self-management strategies play a critical role in managing these diseases, promoting better health outcomes, and encouraging patients to take an active role in their care [36].

Patient education serves as the bedrock of effective disease management. It encompasses interventions aimed at equipping patients with knowledge about their condition, treatment options, self-care practices, lifestyle adjustments, and coping mechanisms. An informed patient is more likely to adhere to treatment plans, recognize symptoms, and seek timely medical assistance [36].

For patients with abdominal diseases, education may include an understanding of the anatomy and physiology of the gastrointestinal system, the etiology of their specific condition, and the implications of various treatment options. For instance, patients diagnosed with IBD often benefit from understanding the difference between Crohn's disease and ulcerative colitis, both of which require distinct treatment approaches. Educational programs tailored to the specific condition can facilitate a more nuanced understanding and foster a collaborative relationship between patients and healthcare providers [37].

Self-Management Strategies

Effective self-management is vital for individuals with abdominal diseases. These strategies often integrate dietary modifications, lifestyle changes, and symptom monitoring, all of which can empower patients to manage their condition proactively.

1. **Dietary Modifications:** Diet plays a pivotal role in the management of many abdominal diseases. For instance, individuals with GERD are often advised to avoid spicy foods, caffeine, and alcohol, while those with IBS may benefit from a low-FODMAP diet, which reduces fermentable oligosaccharides, disaccharides, monosaccharides, and polyols that can trigger symptoms. A food diary can be a helpful tool for patients to track their dietary intake and identify specific food triggers [38].

2. **Symptom Monitoring:** Continuous monitoring of symptoms can help patients and clinicians recognize patterns and triggers associated with their condition. Patients can utilize symptom diaries or mobile health applications to track their abdominal pain, bowel habits, and other relevant symptoms. This information is invaluable during consultations, as it enables healthcare providers to make informed decisions about treatment adjustments [38].

3. **Physical Activity:** Regular exercise is beneficial for overall health and can play a significant role in managing abdominal diseases. Gentle activities such as walking or yoga can enhance digestion, reduce stress, and alleviate some symptoms associated with gastrointestinal disorders. Patients should consult with their healthcare team to determine a suitable exercise regimen based on their specific condition and capabilities.

4. **Stress Management:** Psychological factors, including stress and anxiety, can exacerbate symptoms of many abdominal diseases. Techniques such as mindfulness meditation, cognitive-behavioral therapy (CBT), and relaxation exercises can help mitigate stress. Engaging in hobbies, social activities, or support groups can also provide emotional relief and improve overall well-being [39].

5. **Medication Adherence:** Many patients with abdominal diseases are prescribed medications that require diligent adherence. Understanding the purpose and side effects of medications is critical for patients. Educational materials and discussions during medical appointments can empower patients to take their medications as directed, increasing their chances of successful disease management.

6. **Regular Follow-Up Care:** Establishing a routine of regular follow-up visits with healthcare providers is essential for monitoring the disease's progression and adjusting management plans as needed. Patients should be proactive in attending appointments, discussing any changes in symptoms, and seeking guidance on any aspects of their self-management strategies [39].

The Role of Healthcare Providers

Healthcare providers play a crucial role in facilitating patient education and supporting self-management. Building a strong patient-provider relationship is foundational to effective communication. Providers should approach patient education with empathy and attentiveness, ensuring that complex medical information is presented in a way that is understandable to patients.

Several methods can enhance patient education, including the use of visuals, interactive sessions, and technology. Digital resources such as videos, online portals, and mobile applications can be invaluable tools that cater to diverse learning preferences. Moreover, involving family members in educational sessions can further support patients in their self-management endeavors [40].

Multidisciplinary Approaches to Care:

Abdominal pain is a prevalent complaint and a significant health issue across various demographics. It can emerge from numerous causes, including gastrointestinal disorders, musculoskeletal problems, infections, and systemic

diseases. Given the complexity of abdominal pain and its varied etiologies, multidisciplinary care approaches have become increasingly relevant in providing comprehensive treatment to patients [41].

Understanding Abdominal Pain

Abdominal pain is categorized into two primary types: acute and chronic. Acute abdominal pain can arise suddenly and may suggest an underlying medical emergency, such as appendicitis, gallstones, or perforated organs. Conversely, chronic abdominal pain persists for longer durations, often complicating diagnosis due to its multifactorial nature. Conditions like irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), functional dyspepsia, and even psychological factors can contribute to long-term pain experiences, necessitating a comprehensive evaluation to manage effectively.

Patients presenting with abdominal pain may often undergo a battery of tests, including imaging studies, endoscopic evaluations, and laboratory tests. However, despite the advancements in diagnostic modalities, a significant number of patients remain undiagnosed or are diagnosed with functional disorders. This situation underscores the need for medical professionals beyond the gastroenterology and general surgery realms to diagnose and manage abdominal pain effectively [42].

The Rationale for Multidisciplinary Care

Multidisciplinary care, characterized by collaborative practices among various healthcare professionals, addresses the multifaceted nature of abdominal pain. By drawing expertise from different medical disciplines, a holistic understanding of the patient's condition can be developed. Rather than focusing solely on physical symptoms, multidisciplinary approaches also consider psychological, social, and lifestyle factors that contribute to a patient's pain experience.

Research has shown that a multidisciplinary approach can lead to improved patient satisfaction, reduced pain severity, and overall enhanced quality of life. By considering the entirety of the patient's condition, including comorbidities and psychosocial elements, healthcare teams can design personalized treatment plans that are more effective than any single-discipline management strategy [43].

Key Components of Multidisciplinary Care

Successful multidisciplinary care in managing abdominal pain involves coordination among several healthcare providers. These may include, but are not limited to:

1. **Primary Care Physicians (PCPs):** Often the first point of contact, PCPs play a critical role in initial assessments, referrals, and ongoing follow-up care. They can help coordinate the multidisciplinary team and ensure comprehensive management [44].
2. **Gastroenterologists:** Specialists in digestive system disorders, gastroenterologists contribute essential expertise regarding potential gastrointestinal causes of abdominal pain, offering diagnostic procedures and treatment options.
3. **Pain Specialists:** Pain management physicians focus on alleviating pain through various modalities, including pharmacotherapy, injections, and neuromodulation techniques, and they can help establish a comprehensive pain management protocol [44].
4. **Psychologists/Psychiatrists:** Given the psychological impact of chronic pain, mental health professionals can assist patients in addressing anxiety, depression, or stress management issues through counseling and cognitive behavioral therapy.
5. **Dietitians/Nutritionists:** Nutritional interventions can play a significant role in managing conditions that lead to abdominal pain. Dietitians can tailor dietary modifications aimed at alleviating symptoms pertaining to food intolerances, IBS, or gastrointestinal reflux [45].
6. **Physical Therapists:** For cases where musculoskeletal issues contribute to abdominal discomfort, physical therapists can provide rehabilitation strategies, exercises, and education on body mechanics to alleviate pain.
7. **Surgeons:** In specific instances, surgical intervention may be necessary. Coordination with surgical teams ensures patients are comprehensively evaluated before any surgical decision [45].

By creating a team that integrates expertise from these diverse fields, patients receive a more thorough evaluation and a treatment protocol that encompasses not only physical but also emotional, behavioral, and lifestyle factors [46].

Implementation of Multidisciplinary Approaches

Implementing a multidisciplinary care approach necessitates a structured framework within healthcare systems. Various models have emerged, with the following strategies being particularly effective:

1. **Team Meetings:** Regular multidisciplinary team meetings allow healthcare professionals to discuss complex cases, share insights, and develop collective management plans. These meetings can also facilitate communication between team members, enhancing continuity of care [47].
2. **Integrated Care Pathways:** Establishing integrated care pathways can guide the assessment and treatment of patients with abdominal pain, ensuring that all relevant disciplines are involved from the outset. These pathways can standardize procedures for diagnosis, treatment, and follow-up [48].
3. **Patient-Centric Models:** Focusing on patient involvement in care decisions promotes better compliance and satisfaction. Engaging patients in the multidisciplinary process empowers them to participate actively in managing their pain [49].
4. **Telehealth Solutions:** Advances in telehealth have offered new possibilities for multidisciplinary care, particularly in rural areas where access to specialists may be limited. Virtual consultations can facilitate collaborative care coordination without necessitating physical travel [50].
5. **Education and Training:** Ongoing training for all team members regarding the assessment and management of abdominal pain enhances cohesion within the team. Moreover, educating patients about the multidisciplinary model can help set realistic expectations regarding outcomes [51].

Future Directions in Abdominal Pain Management:

Abdominal pain is a frequent clinical presenting symptom that can stem from a wide variety of etiologies ranging from benign conditions to serious underlying diseases. Effective management of

abdominal pain is paramount not only for enhancing patient quality of life but also for reducing healthcare costs associated with unnecessary diagnostic testing and delayed treatments. As we advance into a new era of medical technology and personalized care, future directions in abdominal pain management are evolving rapidly, driven by innovations in diagnostics, treatment modalities, and a deeper understanding of pain mechanisms [52].

1. Enhancing Diagnostic Accuracy

Historically, the evaluation of abdominal pain has leaned heavily on physical examination and imaging studies. However, these methods can sometimes yield inconclusive results, leading to prolonged discomfort for patients. The future of diagnostic strategies lies in the integration of advanced imaging techniques, molecular diagnostics, and artificial intelligence (AI) [53].

a. Advanced Imaging Techniques

Ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI) have been invaluable for visualizing the abdominal cavity. However, new modalities, such as diffusion-weighted MRI and advanced ultrasound techniques, are being refined for better sensitivity and specificity. These tools may provide clearer images of soft tissues and help delineate complex pathologies quicker than traditional methods [54].

b. Molecular Diagnostics

Emerging fields like biomarker discovery promise to revolutionize how we diagnose conditions that cause abdominal pain. The identification of specific biomarkers in blood, stool, or urine can allow for quicker, non-invasive diagnosis of conditions such as appendicitis, inflammatory bowel disease (IBD), or infections. For instance, ongoing research into microRNA profiles has shown promise in predicting gut inflammatory processes [55].

c. Integration of Artificial Intelligence

AI has begun transforming various aspects of healthcare, and its role in diagnosing abdominal pain will only grow. By utilizing vast datasets, machine learning algorithms can assist physicians in recognizing patterns and predicting disease states. Companies are developing AI tools that analyze imaging studies to provide differential diagnoses,

thereby decreasing diagnostic errors and expediting appropriate treatment [56].

2. Personalized Treatment Approaches

Pain management, particularly concerning abdominal pain, is often treated with a "one-size-fits-all" approach. However, research increasingly highlights the need for personalized treatment strategies based on individual patient factors, including genetic predispositions, comorbidities, and specific pain pathways involved [56].

a. Pharmacogenomics

Pharmacogenomics, the study of how genes affect a person's response to drugs, holds potential in tailoring analgesic therapies. For patients experiencing abdominal pain related to conditions like functional dyspepsia or irritable bowel syndrome (IBS), understanding genetic polymorphisms can inform the choice of medications like antidepressants or proton pump inhibitors, which may vary in effectiveness depending on the genetic makeup of the individual [57].

b. Multimodal Pain Management

Future treatment paradigms emphasize the necessity of multimodal pain management strategies, integrating pharmacologic and non-pharmacologic therapies. For instance, alongside conventional analgesics, therapies such as cognitive-behavioral therapy, physical therapy, acupuncture, and dietary changes are gaining traction. These collaborative approaches have shown to be effective in improving coping mechanisms and decreasing reliance on opioids, a critical concern given the ongoing opioid epidemic [57].

c. Neuromodulation Techniques

Neuromodulation techniques, such as transcutaneous electrical nerve stimulation (TENS), peripheral nerve stimulation, and even spinal cord stimulation, are exhibiting promise in managing chronic abdominal pain. As research in this field continues, these technologies are being refined and may soon be FDA-approved for various abdominal pain syndromes. Minimally invasive procedures can enable better control over pain without the side effects commonly associated with traditional medication [58].

3. Addressing Psychological Factors

Chronic abdominal pain often overlaps with psychological comorbidities such as anxiety and depression. The intricate relationship between the gut and brain suggests that future abdominal pain management approaches should incorporate psychological support as a routine component of care. Recognizing and treating psychological factors can significantly improve pain outcomes.

a. Integrated Care Models

Healthcare systems are increasingly moving toward integrated care models, where multidisciplinary teams—including gastroenterologists, pain specialists, psychologists, and dietitians—work together to provide comprehensive care for patients with abdominal pain. Accessing psychological therapies, such as mindfulness-based stress reduction or cognitive behavioral therapy, can be a cornerstone of the management plan, targeting both physical and emotional components of pain [59].

b. Virtual Mental Health Support

Technological advancements have enabled the growth of telehealth and digital mental health services, providing accessible psychological support for patients who may have difficulty or reluctance to engage in traditional therapy settings. Virtual platforms can facilitate easy access to tailored mental health interventions, improving treatment adherence and outcomes [60].

4. Emphasis on Preventative Approaches

As our understanding of pathophysiological mechanisms underlying abdominal pain broadens, the focus on preventative strategies becomes paramount. Education plays a crucial role in this regard [61].

a. Patient Education and Engagement

Educating patients about potential triggers for their abdominal pain, such as diet, lifestyle choices, and stress management, can empower them to make informed decisions about their health. Future medical practice will likely incorporate more patient-centric educational resources, utilizing mobile applications and online platforms to disseminate vital information to those affected by chronic abdominal pain [61].

b. Lifestyle Modifications

Increasing awareness of the role that lifestyle choices, including diet and exercise, play in gastrointestinal health can serve as an essential prevention tool. Nutritionists and dietitians will play an integral role in managing conditions like IBS, where tailored dietary recommendations, such as those following the low FODMAP diet, can provide significant relief and prevent exacerbations [62].

c. Advocacy for Research and Funding

Additionally, increased advocacy for research funding into gastrointestinal disorders can lead to better understanding and management of chronic abdominal pain. Prioritizing research that investigates the biopsychosocial factors contributing to abdominal pain can further improve prevention and management strategies [63].

Conclusion:

In conclusion, the study "Understanding Abdominal Pain: Assessment and Nursing Interventions" emphasizes the pivotal role that nurses play in the assessment and management of abdominal pain. By integrating thorough assessment techniques, including comprehensive patient history and physical examination, nurses can identify the multifactorial nature of abdominal pain and its potential underlying causes. This study highlights the necessity of employing standardized pain assessment tools to enhance communication and ensure that pain management strategies are tailored to individual patient needs.

Furthermore, effective nursing interventions, encompassing both pharmacological and non-pharmacological approaches, are crucial in alleviating patient discomfort and improving overall outcomes. Education and empowerment of patients through self-management strategies not only enhance their understanding of symptoms and treatment options but also foster active participation in their care. Collaboration across disciplines is essential to create a holistic care plan that addresses the diverse aspects of abdominal pain. The findings of this study advocate for ongoing professional development and research to refine assessment techniques and interventions, ultimately enhancing the quality of care for patients experiencing abdominal pain and promoting better health outcomes in clinical settings.

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