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# Effectiveness of Jazz Instrumental Music Therapy in Reducing Pain Intensity in Abdominal Pain Patients in the Emergency Room Gatot Soebroto Army Hospital

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**Abstract**

Abdominal pain is one of the primary complaints of patients visiting the Emergency Room, requiring rapid and appropriate pain management. In addition to pharmacological therapy, non-pharmacological interventions such as instrumental jazz music therapy can be used as a distraction and supportive therapy because it is safe, easy to implement, and has no side effects. To determine the effectiveness of instrumental jazz music therapy in reducing pain intensity among patients with abdominal pain in the Emergency Room of RSPAD Gatot Soebroto. This study used a case study design involving four cases selected from the Emergency Room with complaints of abdominal pain. The sample consisted of patients experiencing acute abdominal pain in the Emergency Room, selected based on predetermined inclusion and exclusion criteria. The intervention provided was instrumental jazz music therapy administered once daily for 10 minutes using audio media with earphones. Pain intensity was measured before and after the intervention using the Wong-Baker Pain Rating Scale, accompanied by observations of patients' physiological and behavioral responses during therapy. The results demonstrated a reduction in pain intensity following the administration of instrumental jazz music therapy. This case study concludes that instrumental jazz music therapy can be effectively used as a non-pharmacological nursing intervention to reduce pain intensity in patients with abdominal pain in the Emergency Room.

*Keywords: Abdominal pain, Acute pain, Instrumental jazz music therapy, Emergency room*

## INTRODUCTION

The Emergency Room is a service unit within a hospital that provides rapid medical care. Triage involves assessing pain intensity as an indicator of urgency, particularly for common symptoms such as abdominal pain, which is a common reason for emergency room visits and requires prompt evaluation and treatment to reduce the risk of serious complications. Abdominal pain is an unpleasant, subjective sensation felt in any region of the abdomen (Amri & Manjas, 2019).

According to the World Health Organization (WHO), abdominal pain is a common complaint, with a global prevalence of 1.8-2.1 million cases per year among all patient visits to emergency room (WHO, 2021). In Indonesia, abdominal pain is also relatively high, with a reported prevalence of approximately 40.8%. This high figure indicates that abdominal pain is a significant health problem in ERs requiring prompt and appropriate treatment (Adityaningrum & Yunus, 2022). This condition is also supported by data from the Gatot Soebroto Army Hospital Emergency Room, based on the

results of clinical practice and nurse interviews, which show that abdominal pain complaints are a frequently encountered case and are an important part of emergency nursing care.

Abdominal pain can be a sign of a serious problem in the abdomen, such as inflammation, infection, or damage to an internal organ. Therefore, it's important to understand that abdominal pain is not a disease, but rather a symptom that can be caused by a variety of medical conditions. The most common causes of abdominal pain include appendicitis, biliary colic, cholecystitis, diverticulitis, intestinal obstruction, viscus perforation, pancreatitis, peritonitis, salpingitis, mesenteric adenitis, and renal colic (Damansyah et al., 2025).

Management of abdominal pain in the emergency room includes accurate pain assessment, appropriate analgesic administration, and effective early management, as delays in treating acute pain can worsen patient outcomes. Therefore, non-pharmacological approaches such as distraction techniques, including jazz instrumental music therapy, are a safe and easy-to-implement alternative to reduce pain intensity and improve patient comfort (Amalia & Susanti, 2019).

Music therapy is an organized auditory stimulus consisting of melody, rhythm, harmony, color (timbre), form, and style (Widiyono, 2021). Jazz music evolved from blues, a blend of African and American cultures. The improvisational elements of instrumental jazz allow listeners to be carried away by the melodies and experience a flow effect. This can transform negative emotions into positive ones, relax patients, and increase motivation and cognition through positive thinking (Hardika, 2023).

Abdominal pain can be caused by various conditions and causes significant discomfort and disrupts the patient's physiological stability. If not managed properly, pain can increase the stress response, prolong recovery time, and reduce the quality of nursing care in the emergency room. Therefore, effective, safe, and easy-to-implement nursing interventions are needed to reduce pain intensity in abdominal pain patients. In addition to pharmacological therapy, non-pharmacological interventions such as music therapy have been widely studied and proven effective in helping reduce pain intensity. Instrumental music therapy, especially classical music, has shown benefits in pain management, however, research on jazz instrumental music therapy is still limited, especially in abdominal pain patients in the emergency room. Jazz instrumental music is considered to have rhythm and harmony that can provide a relaxing and distraction effect on pain perception. Based on these conditions, researchers are interested in examining "Effectiveness of Providing Jazz Instrumental Music Therapy in Reducing Pain Intensity in Abdominal Pain Patients in the Emergency Room of Gatot Soebroto Army Hospital".

## RESEARCH METHODOLOGY

This study used a case study design involving 4 patients in the Emergency Room. Sample selection was based on inclusion and exclusion criteria in patients with acute abdominal pain. The intervention provided was instrumental jazz music therapy performed once a day for 10 minutes using audio media with earphones prepared the researcher’s mobile phone. Patients can also access it because researchers provide a Google Drive link to the instrumental jazz audio: https://bit.ly/4jTtH3h. The researcher's facilitated patient access to the music by providing Wi-Fi, enabling patients to download or replay the audio if desired. Pain intensity was measured before and after the intervention using the Wong-Baker Pain Rating Scale, accompanied by

observations of the patient's physiological and behavioral responses during therapy. Inclusion criteria included respondents who were cooperative and willing to participate in therapy music instrumental jazz, aged 18-60 years, had vital signs within normal limits, and experienced moderate pain with a score of 4-6 in the yellow triage at the Gatot Soebroto Army Hospital Emergency Room, while exclusion criteria included respondents who were unwilling or uncooperative and respondents with hearing impairment.

## CASE DESCRIPTION

- Case 1 (*Intervention)*

Ny. C (F) is 41 years old. Patient admission date 16/12/2025. Primary survey: A (Airway): Patent airway, NGT inserted. B (Breathing): Spontaneous breathing, RR: 20x/minute, SpO2: 99% no additional breath sounds. C (Circulation): Hb 10.9 g/dL indicates mild anemia, acral palpable warm, relatively stable circulation, BP 121/86 mmHg, N 101 x/minute, CRT <2 seconds. D (Disability): GCS 15 (E4V5M6), Compos Mentis consciousness. Pain was measured using a Wong-Baker pain scale, with the patient pointing to 6. Secondary survey: main complaint: the patient complained of abdominal pain that worsened when moving, felt bloated, felt like it was full and about to burst, accompanied by nausea, difficulty defecating, and difficulty passing flatus. Past medical history and allergies: The patient had no history of chronic illness or allergies. The results of the vital signs examination showed BP: 121/86 mmHg, N: 101 x / minute, RR: 20x / minute, SpO2: 99%. The results of the head to toe examination, the condition of the head, neck, thorax, and extremities were within normal limits. However, the abdominal examination found the following results: Flat and tense abdomen (nasal tube inserted). Palpation: Tenderness on the abdomen, no palpable mass. P: Pain increases when moving, Q: Abdominal pain feels like it is full and about to burst, R: Pain is felt throughout the abdomen, S: 6, T: Pain is felt suddenly. Percussion: Tympanic dominant. Auscultation: bowel sounds 5x/minute (decreased). Lab results showed Hemoglobin: 10.9 g/dL, Hematocrit: 31%, Erythrocytes: 3.5 million/µL, Leukocytes: 17840/µL, Platelets: 258000/µL, SGOT: 42 U/L, SGPT: 50 U/L, GDS: 44 mg/dL, Creatinine: 0.48 mg/dL, Potassium: 3.3 mmol/L. Abdominal radiography results showed pneumoperitoneum, which pointed to the possibility of gastrointestinal leakage, accompanied by an image of obstructive ileus with a differential diagnosis of paralytic ileus, as well as the impression of ascites in the right hemiabdomen indicating fluid accumulation in the peritoneal cavity. The management provided included IVFD RL 500 cc/8 hours, If painful PCT 3x1 gr/IV, Inj. Cefriaxone 1x2 gr/IV, Omeprazole 2x40 mg injection, Ondansetron 3x4 mg injection, Dexametasone 3x1 amp injection, Neostigmine 2x0.5 mg/IM injection, and NGT insertion and drainage with the patient temporarily fasted. Based on the assessment results, the patient experienced acute pain nursing problems.

The results of the implementation and evaluation of jazz instrumental music therapy were given as a non-pharmacological intervention to reduce acute pain in Ny. C at 3.00 PM. During the assessment, the patient complained of generalized abdominal pain with a full sensation like it was about to burst, with a pain scale of 6 based on the Wong-Baker Pain Rating Scale. After the intervention, the patient stated that the pain was reduced and she felt more comfortable. Objectively, the patient appeared more relaxed, with a decrease in the pain scale from 6 to 4. The evaluation showed that the acute pain

was partially resolved and the music therapy could be continued independently.

- Case 2 (*Control*)

Tn. A (M) is 33 years old. Patient admission date 16/12/2025. Primary Survey: A (Airway): Patent airway, B (Breathing): Spontaneous breathing, RR 20x/minute, SpO2: 99% no additional breath sounds, C (Circulation): Hb 16.4 indicates no anemia and no bleeding, BP 128/87 N 64 x/minute, acral feels warm, D (Disability): GCS 15 (E4V5M6), Consciousness Compos Mentis. Pain was measured using a Wong-Baker measuring tool with a pain scale, the patient pointed at number 6. Secondary survey: main complaint: The patient said pain in the entire abdominal area, especially the upper right abdomen spreading to the back, accompanied by nausea and vomiting 3 times. Past medical history and allergies The patient has no history of chronic diseases and allergies. The results of the vital signs examination showed BP: 128/87 mmHg, N: 64x/minute, RR: 20x/minute, S: 36.6˚C, SpO2: 99%. The results of the head to toe examination, the condition of the head, neck, thorax, and extremities were within normal limits. However, the abdominal examination found the following results: Flat abdomen. Palpation: Tenderness throughout the abdominal area, dominant in the right upper quadrant, no palpable mass. Percussion: Tympanic, no pathological dullness. Auscultation: Bowel sounds 10x/minute (normal). P: Pain increases during activity, Q: Pain like being stabbed and bloated, R: The entire abdominal area, dominant in the right upper abdomen, S: 6, T: Pain is felt continuously. Lab results showed Hemoglobin: 16.4 g/dL, Hematocrit: 46%, Erythrocytes: 5.8 million/µL, Leukocytes: 10690/µL, Platelets: 283000/µL, GDS: 90 mg/dL, Urea: 18 mg/dL, Creatinine: 0.92 mg/dL. Previous abdominal radiography results supported the diagnosis of cholelithiasis, characterized by the presence of radiopaque shadows in the gallbladder region that corresponded to gallstones. The management provided included IVFD RL/12 hours, Inj. PCT 1x1 gr, Inj. Omeprazole 1x40 mg. Based on the results of the assessment, the patient experienced acute pain nursing problems.

The results of the implementation and evaluation of deep breathing relaxation were given as a non-pharmacological intervention to reduce acute pain in Tn. A at 4.00 PM. During the assessment, the patient reported pain with a scale of 6 based on the Wong-Baker Pain Rating Scale. The intervention was carried out with deep breathing exercises. After the intervention, the patient stated that the pain was slightly reduced and felt calmer. Objectively, there was an improvement in expression, with a decrease in the pain scale from 6 to 4. The evaluation showed that the pain was partially resolved, and deep breathing relaxation therapy could be continued independently.

- Case 3 (*Intervention*)

Ny. A (F) is 22 years old. Patient admission date 18/12/2025. Primary Survey: A (Airway): Patent airway, NGT installed, B (Breathing): Spontaneous breathing, RR: 22x/minute, SpO2: 99% no additional breath sounds, C (Circulation): BP 154/71, N 111 x/minute (Tachycardia), no active bleeding, NGT: greenish residue ±30 cc, D (Disability): GCS 15 (E4V5M6), Consciousness Compos Mentis, Pain was measured using a Wong-Baker measuring tool with a pain scale, the patient pointed at number 6. Secondary Survey: main complaint: The patient said that the abdominal pain was continuous. Initially the pain came and went, then it was constant. The pain felt twisting and burning especially in the pit of the

stomach, accompanied by nausea and vomiting. The patient experienced weight loss. The patient reported difficulty defecating and passing flatus. The patient's medical history included taking OAT for approximately 1 month, but stopped 2 days before admission due to persistent vomiting. There was no history of allergies. The results of the vital signs examination showed BP: 154/71 mmHg, N: 111 x / minute (tachycardia), RR: 21x / minute, SpO2: 99%. The results of the head to toe examination, the condition of the head, neck, thorax, and extremities were within normal limits. However, the abdominal examination found the following results: The abdomen appeared distended (bloated) and tense (nasal drip inserted), Palpation: Abdominal tenderness, no palpable mass, Percussion: Tympanic dominant, Auscultation: Bowel sounds 4x / minute (decreased). P: Pain increases when moving, Q: Abdominal pain feels full and like it is about to burst, R: Pain is felt throughout the abdomen, S: 6, T: Pain is felt continuously. Lab results showed Hemoglobin: 11.4 g/dL, Hematocrit: 32%, Erythrocytes: 3.5 million/µL, Leukocytes: 6490/µL, Platelets: 506000/µL, SGOT: 34 U/L, SGPT: 10 U/L, GDS: 76 mg/dL, Urea: 67 mg/dL, Creatinine: 0.89 mg/dL, Sodium: 144 mmol/L, Potassium: 3.2 mmol/L, Chloride: 102 mmol/L. Abdominal radiography showed a picture of small bowel obstruction ileus, characterized by dilation of the small intestine and thickening of the intestinal wall that has the potential to cause disruption of the flow of intestinal contents. In addition, ascites was seen, in the form of fluid accumulation in the peritoneal cavity which was seen as a general dullness in the abdomen with the intestines being pushed towards the center. The management provided included IVFD Tridex 27B/8 hours, Ciprofloxacin 2x1/IV injection, Omeprazole 2x1 40mg/IV injection, Ondansetron 3x1 4mg/IV injection, FG Trohes Susp 3x2 tablets PO. Based on the results of the assessment, the patient experienced acute pain nursing problems.

The results of the implementation and evaluation of jazz instrumental music therapy were given as a non-pharmacological intervention to reduce acute pain in Nn. A at 11.00 AM. During the assessment, the patient complained of abdominal pain felt with a bloating sensation like it was about to burst, tension and tenderness, with a pain scale of 6 based on the Wong-Baker Pain Rating Scale. After the intervention, the patient stated that the pain was reduced and felt more comfortable. Objectively, the patient appeared more relaxed, with a decrease in the pain scale from 6 to 2. The evaluation showed that the acute pain was partially resolved and music therapy could be continued independently.

- Case 4 (*Control)*

Tn. S (M) is 58 years old. Patient admission date 19/12/2025. Primary Survey: A (Airway): Patent airway. B (Breathing): Spontaneous breathing, RR 20x/minute, SpO2: 99%, no additional breath sounds. C (Circulation): Hb 16.4 indicates no anemia and no bleeding, BP 128/87 N 64 x/minute, acral feels warm. D (Disability): GCS 15 (E4V5M6), Consciousness Compos Mentis. Pain was measured using a Wong-Baker measuring tool with a pain scale, the patient pointed at number 6. Secondary Survey: main complaint: The patient came with complaints of abdominal pain that had been felt since several days before admission to the hospital. The pain was felt to be spreading, accompanied by nausea and repeated vomiting. The patient also complained of decreased appetite. The patient said that he was quickly tired and restless when doing activities. Past medical history The patient has a history of chronic kidney

disease (CKD) and underwent Continuous Ambulatory Peritoneal Dialysis (CAPD). There is no history of allergies. The results of the vital signs examination showed BP 160/95, N 102 x/minute, RR: 22x/minute, SpO2: 98%. The results of the head to toe examination, the condition of the head, neck, thorax, and extremities were within normal limits. However, the abdominal examination found the following results: The abdomen appeared mildly distended, the patient appeared to be enduring pain when moving. A CAPD catheter was installed in the abdomen, Palpation: Tenderness was felt in all quadrants of the abdomen, especially the lower abdominal area, there was mild muscular defense, Percussion: Tympanic dominant, Auscultation: Bowel sounds 4x/minute (decreased). P: Pain increases when moving and when the stomach is pressed, Q: Pain like stabbing and bloating, R: Pain in the abdominal area, difficult to localize, S: 6, T: Pain is felt continuously. Lab results showed Albumin: 2.2 g/dL, Magnesium: 1.57 mg/dL, Total Calcium: 7.0 mg/dL, Sodium: 131 mmol/L, Potassium: 3.1 mmol/L, Chloride: 89 mmol/L. Abdominal ultrasound examination showed bilateral parenchymal kidney disease, characterized by reduced kidney size, thinning of the cortex, and decreased differentiation of the cortex and medulla, consistent with chronic kidney disease (CKD). In addition, ascites, an accumulation of fluid in the peritoneal cavity that can cause distension and abdominal pain, was found. An ultrasound also suggested cystitis, an inflammation of the bladder. Treatment included IVFD NaCl 0.9% 500 cc/12 hours, PCT 3x1 g/IV for pain, Cefriaxone 1x2 g/IV injection, Omeprazole 2x40 mg/IV injection, Ondansetron 3x4 mg/IV injection, and Dexamethasone 3x1 amp/IV injection.

The results of the implementation and evaluation of deep breathing relaxation were given as a non-pharmacological intervention to reduce acute pain in Tn. S at 5.00 PM. During the assessment, the patient reported pain with a scale of 6 based on the Wong-Baker Pain Rating Scale. The intervention was carried out with deep breathing exercises. After the intervention, the patient stated that the pain was slightly reduced but still felt when moving. Objectively, there was an improvement in expression, with a decrease in the pain scale from 6 to 4. The evaluation showed that the pain was partially resolved, and deep breathing relaxation therapy could be continued independently.

## RESULTS AND DISCUSSION

The results of nursing care for abdominal pain patients in the emergency room at Gatot Soebroto Army Hospital indicate that acute pain is a major nursing problem requiring prompt and appropriate treatment. In the intervention group (Ny. C and Nn. A), severe pain was found accompanied by physiological and psychological responses, while in the control group (Tn. A and Tn. S), pain was in the moderate category. Unoptimally managed acute pain can trigger a stress response and worsen the patient's physiological condition, especially in the dynamic emergency environment (Kurniyawan et al., 2020). Inadequate pain assessment and management also impacts the comfort and quality of nursing care (Potter et al., 2021).

After receiving non-pharmacological nursing intervention, the intervention group receiving jazz instrumental music therapy showed a more significant reduction in pain intensity compared to the control group receiving only deep breathing relaxation. Ny. C experienced a decrease in pain scale from 6 to 4, while Nn. A showed a decrease from 6 to 2. In the control group, Tn. A and Tn. S each experienced a decrease in pain from 6 to 4. Music therapy acts as a cognitive

distraction that can shift the patient's focus from the pain stimulus so that the transmission of pain impulses to the brain can be suppressed (Nilsson, 2020). The effectiveness of auditory distraction through music is also reported to be higher than deep breathing relaxation techniques in reducing the intensity of acute pain (Wu et al., 2021).

Instrumental jazz music therapy reduces pain by influencing the function of the central nervous system and the body's hormonal stress response. Auditory stimulation from instrumental jazz music with a stable tempo and soft harmonies promotes a relaxation state by activating the parasympathetic nervous system, leading to decreased sympathetic activity, heart rate, and stress hormone levels such as cortisol (Wilson, 2025). This relaxation state stimulates the release of endogenous opioids, including endorphins and enkephalins, which act as natural pain relievers by inhibiting pain signal transmission at the spinal and brain levels. In addition, instrumental jazz music affects brain regions involved in emotional regulation, such as the limbic system and thalamus, thereby reducing anxiety and emotional distress that intensify pain perception (Nilsson, 2020). The reduction of emotional and cognitive stress helps limit the transmission of pain signals to higher brain centers through the *gate control* mechanism (Wu et al., 2021).

Jazz instrumental music therapy was administered to the intervention group for approximately 10–15 minutes using audio media, which has been shown to provide significant relaxation and pain reduction effects (Smeltzer et al., 2022). This duration aligns with research by Wilson (2025), which found that providing 10 minutes of music therapy to patients in the emergency room significantly reduced pain intensity and increased patient comfort and cooperation during treatment. This short-term pain management is crucial in the emergency room environment, which is characterized by time constraints and demands for rapid action. In cases of abdominal tension, jazz instrumental music therapy acts as an effective form of distraction that increases patient comfort and relaxation (Smeltzer et al., 2022).

The nursing implications of these findings suggest that nurses play a crucial role in implementing non-pharmacological pain management independently in the emergency room. Jazz instrumental music therapy can be used as a complementary intervention to pharmacological therapy because it is safe, easy to implement, and effective in improving patient comfort (Potter et al., 2021). Creating a conducive auditory environment through the use of earphones also contributes to the effectiveness of music therapy in reducing pain perception (Nilsson, 2020).

One limitation in implementing this nursing care was the relatively limited number of patients observed during the observation period in the Gatot Soebroto Army Hospital's emergency room. The fluctuating nature of the emergency room meant that patients with abdominal pain who met the intervention criteria were not always present.

## CONCLUSIONS

Based on the entire nursing process, the researcher can draw the following conclusions:

The results of the nursing care assessment for patients with abdominal pain in the emergency room at Gatot Soebroto Army Hospital indicate that acute pain is the primary nursing problem. Based on the triage results, the patient was categorized as yellow (urgent), a condition that requires immediate treatment but is not immediately life-threatening. The assessment, conducted using the Wong-Baker Faces Pain Rating Scale, showed that patients in the intervention group experienced moderate pain. Meanwhile,

patients in the control group experienced moderate pain is relatively stable.

The implementation of Evidence-Based Practice was identified through the provision of jazz instrumental music therapy as a non-pharmacological intervention in the intervention group, while the control group was given deep breathing relaxation techniques.

Identified changes in pain intensity before and after the intervention showed that the intervention group experienced a more significant reduction in pain, with Ny. C experiencing a decrease from a 6 to a 4 and Nn. A experiencing a decrease from a 6 to a 2, while the control group only experienced a decrease from a 6 to a 4. This difference in results confirms that jazz instrumental music therapy is more effective in reducing pain intensity in abdominal pain patients in the emergency room.

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