

THE APPLICATION OF SLOW DEEP BREATHING AND SPIRITUAL EMOTIONAL FREEDOM TECHNIQUE IN A PATIENT WITH RECTAL CANCER EXPERIENCING CHRONIC PAIN AND ANXIETY: A CASE REPORT

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ABSTRACT

Rectal cancer is a malignancy of the lower gastrointestinal tract that is often accompanied by chronic pain and anxiety, particularly in patients undergoing chemotherapy. These conditions affect physical, psychological, and spiritual aspects, thus requiring a holistic nursing care approach. This case report aimed to describe the patient's response to a combination of Slow Deep Breathing (SDB) and Spiritual Emotional Freedom Technique (SEFT) interventions in reducing pain and anxiety. This study employed a case report design involving a 48-year-old male patient diagnosed with stage III rectal cancer, accompanied by anemia, who was undergoing chemotherapy. The intervention was administered once daily for three consecutive days, with each session lasting 20-25 minutes. Pain intensity was measured using the Visual Analogue Scale (VAS), while anxiety levels were assessed using the Hamilton Anxiety Rating Scale (HAM-A) before and after the intervention. The results showed a reduction in the pain score from 8 to 5 and a decrease in the anxiety score from 28 to 19. Clinically, the patient appeared more relaxed, cooperative, and showed improved acceptance of his illness. The combination of SDB and SEFT has the potential to serve as a complementary nursing intervention that supports a holistic approach in the care of patients with rectal cancer.

Keywords: Rectal Cancer, Slow Deep Breathing, Spiritual Emotional Freedom Technique, Pain, Anxiety.

INTRODUCTION

Rectal cancer is a malignancy of the lower gastrointestinal tract and remains a significant global health problem (Liana et al., 2025). According to the Global Cancer Observatory (GLOBOCAN), colorectal cancer ranks as the third most commonly diagnosed cancer worldwide and the second leading cause of cancer-related mortality, with more than 1.9 million new cases annually (Sung et al., 2021). In

Indonesia, approximately 34,000 new cases of colorectal cancer were reported in 2020, with over 23,000 deaths, reflecting a substantial national disease burden (Ferlay et al., 2021). A national literature review also reported an increasing incidence of colorectal cancer in both younger (<50 years) and older (≥50 years) age groups, with increases of 9.24% and 2.38%,

respectively (Rahadiani et al., 2022).

Chronic pain is one of the most common symptoms experienced by cancer patients and remains a significant clinical problem that is often inadequately managed (Snijders et al., 2023). A study conducted at Dr. Soedarso Regional Hospital in Pontianak found that 50.5% of 109 colorectal cancer patients between 2018 and 2021 reported abdominal pain as their primary complaint (Maharani et al., 2024). Furthermore, a population-based study in Denmark involving 11,600 patients—comprising 7,127 colon cancer patients and 4,473 rectal cancer patients—reported that 41.5% experienced chronic pain after treatment, with 15.4% experiencing severe pain. Severe pain was more prevalent among rectal cancer patients (16.7%) compared to colon cancer patients (14.5%) (Elfeki et al., 2025).

Barriers to effective cancer pain management are often associated with healthcare providers, including insufficient knowledge of pain management and misconceptions regarding opioid use, as well as patients' fears of addiction, which may lead to significant undertreatment (Yu et al., 2022). In addition, a meta-analysis revealed that despite advancements in pain classification through the ICD-11 chronic cancer pain taxonomy and improvements in the WHO analgesic ladder, approximately 40% of patients still experience inadequately controlled pain (Mestdagh et al., 2023).

Patients with rectal cancer undergoing chemotherapy also frequently experience anxiety due to treatment side effects, uncertainty regarding prognosis, and changes in physical and psychosocial conditions (Renna et al., 2023). High levels of emotional stress may

increase stress hormone levels, such as cortisol, adrenaline, and noradrenaline, which suppress immune cell activity, including T cells, natural killer (NK) cells, and dendritic cells, thereby weakening the immune response against cancer (Yang et al., 2024). Uncontrolled pain and persistent anxiety may interact synergistically, exacerbating physiological stress and reducing treatment adherence and effectiveness (Getie et al., 2025).

The WHO Cancer Pain Guidelines (2023) emphasize that cancer pain is multidimensional; therefore, pain management should include non-pharmacological interventions such as relaxation techniques, spiritual counseling, and cognitive behavioral therapy (Kettyle & Saunders, 2023). A holistic approach addressing physical, psychological, social, and spiritual aspects is essential in the nursing care of cancer patients (Ambushe et al., 2023).

Slow Deep Breathing (SDB) and Spiritual Emotional Freedom Technique (SEFT) are holistic interventions that have the potential to reduce pain and anxiety through physiological, psychological, and spiritual mechanisms (Niken et al., 2020; Sajidah et al., 2021). However, the combined application of these interventions in patients with rectal cancer remains limited, particularly within the context of nursing practice in Indonesia. Therefore, this case report aims to provide an empirical description of the patient's response to the combination of SDB and SEFT interventions in reducing pain and anxiety.

LITERATURE REVIEW

Chronic pain in patients with colorectal cancer can be classified

as nociceptive, neuropathic, or psychogenic (Zielińska et al., 2021). Nociceptive pain is caused by tumor growth that compresses or invades surrounding tissues, including the skin, muscles, bones, and adjacent organs such as the bladder or pelvic structures, resulting in localized pain that may be dull, persistent, or stabbing in nature (Wang et al., 2024). Neuropathic pain occurs when tumor cells and immune cells within the tumor microenvironment release algogenic mediators, such as CCL2, PGE2, IL-6, TNF- α , and IL-1 β . These substances bind to receptors on afferent nerve fibers, lowering the activation threshold and increasing pain sensitivity (W. L. Wang et al., 2025). Psychogenic pain is associated with the activation of the hypothalamic-pituitary-adrenal (HPA) axis, which increases cortisol and catecholamine levels, thereby lowering the pain threshold (Benson et al., 2019).

Anxiety is a common psychological response experienced by cancer patients (Mols et al., 2018). Chemotherapy is associated with various side effects, including nausea, vomiting, diarrhea, peripheral neuropathy, and anemia, which can increase physical discomfort and exacerbate the psychological burden of patients (Adeleke et al., 2025). Prolonged anxiety can elevate stress hormone levels, suppress immune function, and worsen disease progression and quality of life in cancer patients (Mols et al., 2018; Yang et al., 2024).

A study also reported that colorectal cancer patients experiencing anxiety and depression tend to have more severe pain, fatigue, and sleep disturbances compared to those without psychological disorders (Song et al., 2024).

Slow Deep Breathing (SDB) is a breathing relaxation technique performed by inhaling slowly and deeply, followed by controlled exhalation, to improve oxygenation and induce a calming effect on the nervous system (Vosseler et al., 2021). Slow and deep breathing patterns have been shown to reduce heart rate, decrease cortisol levels, enhance tissue oxygenation, and alleviate muscle tension (Laborde et al., 2022). In patients with cancer who experience anemia and physical weakness, SDB is considered a safe and effective intervention for reducing pain and anxiety (Rezaei et al., 2024).

Spiritual Emotional Freedom Technique (SEFT) is an intervention that combines stimulation of meridian points through tapping techniques with spiritual affirmation (Maryana, 2018). This intervention works by reducing amygdala activity, improving emotional regulation, and activating descending pain inhibition pathways (Meeker et al., 2022). Previous studies have shown that SEFT can reduce pain and anxiety, as well as enhance self-acceptance, hope, and psychological resilience in cancer patients (Niken et al., 2020; Rostami et al., 2025).

Table 1. Vital Signs

	15 Sep	16 Sep	17 Sep	18 Sep
BP (mmHg)	100/86	109/75	106/70	99/85
HR (BPM)	106	87	81	69
RR (/min)	18	16	22	18
Temp (°C)	36.6	36.7	36.7	36.3
SpO2 (%)	99	98	97	99

Table 2. Laboratory Results

	15 Sep	16 Sep
Hemoglobin	8.9	11.3
Leukosit	10140	12310
Eritrosit	3.25	4.34
Hematokrit	26.2	34.8
Trombosit	631000	584000
Basofil	0	0
Eosinofil	3	3
Segmen	61	61
Limfosit	28	28
Monosit	8	8
NLR	2.2	2.2

From a psychological perspective, the patient appeared tense, easily anxious, and frequently exhibited facial expressions indicative of pain. He expressed significant concern regarding the chemotherapy process and its side effects, including hair loss, nausea, and persistent fatigue. The patient also reported fear of treatment failure and disease progression.

From a spiritual perspective, the patient stated that since experiencing bleeding, he had been unable to perform religious practices, such as daily prayers, optimally. This condition led to feelings of guilt, sadness, and a sense of inner emptiness. The patient reported that prior to his illness, he had been actively engaged in religious activities and regularly participated in community-based worship. However, during his illness, physical limitations and pain contributed to a perceived distance from God and a loss of inner peace.

From a social perspective, the patient received strong family support, particularly from his wife and children, who consistently accompanied him during hospitalization. The family played an active role in meeting the patient's needs, providing emotional support, and assisting in deciding on the

treatment. The patient also expressed a desire to reconnect with his friends.

RESEARCH METHODS

This study employed a case report design involving a patient diagnosed with stage III rectal cancer, accompanied by anemia, who was undergoing chemotherapy in the Ali 3 Ward at Welas Asih Hospital, Baleendah, Bandung. Nursing care and data collection were conducted from September 15 to 18, 2025. Data were collected through anamnesis, observation, documentation review, and physical examination. The variables assessed in this study were pain intensity and anxiety levels. Pain intensity was measured using the Visual Analogue Scale (VAS), while anxiety levels were assessed using the Hamilton Anxiety Rating Scale (HAM-A).

Before the intervention, informed consent was obtained after explaining the study's purpose and procedures to the patient. Patient were positioned in a comfortable sitting posture with the neck, back, and shoulders relaxed. Vital signs, specifically oxygen saturation and heart rate, were monitored before, during, and after the procedure. The intervention consisted of a

combination of Slow Deep Breathing (SDB) and Spiritual Emotional Freedom Technique (SEFT), administered once daily for three consecutive days, with each session lasting 20-25 minutes. Pain and anxiety levels were measured before (pre-test) and after (post-test) the intervention.

The Slow Deep Breathing (SDB) technique was performed by instructing the patient to inhale slowly and deeply through the nose for approximately 3 seconds until the abdomen expanded, followed by slow exhalation through the mouth for approximately 6 seconds. This exercise was conducted for 5-10 minutes to promote relaxation (Setiawati et al., 2024). The Spiritual Emotional Freedom

Technique (SEFT) intervention was conducted in three stages:

1. Set-up, in which the patient was guided to express self-acceptance and willingness to cope with the condition through positive affirmations and prayer.
2. Tune-in, in which the patient focused on negative feelings such as pain and anxiety.
3. Tapping, which involved gentle tapping using the fingertips on nine meridian points: eyebrow (EB), side of the eye (SE), under the eye (UE), under the nose (UN), chin (CH), collarbone (CB), under the arm (UA), gamut point (GP), and karate chop point (KC), while repeating positive affirmations (Maryana, 2018).

RESEARCH RESULTS

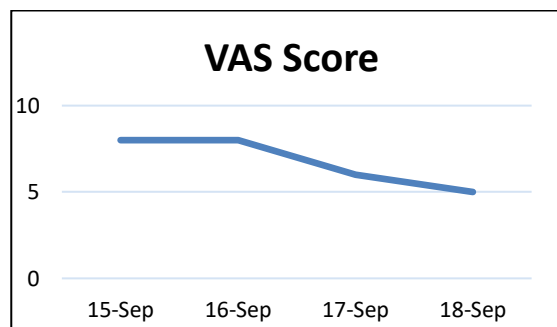


Figure 1. Changes in VAS score

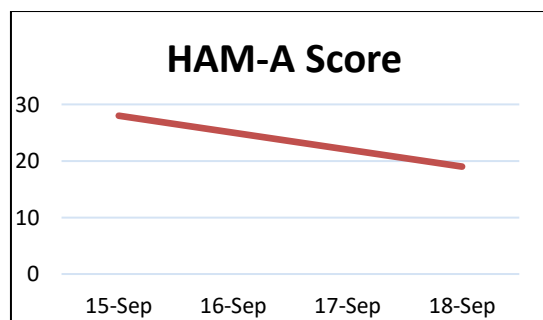


Figure 2. Changes in HAM-A score

Based on the evaluation results, after three days of the combined SDB and SEFT intervention, there was a reduction in the pain score from 8 (severe pain) to 5 (moderate pain), as well as a decrease in the anxiety score from 28 (moderate-severe anxiety) to 19 (mild anxiety). In percentage terms, pain decreased by 37.5%, while anxiety decreased by 32.14%. In addition, the patient appeared more relaxed, cooperative, and demonstrated improved spiritual acceptance of his condition.

Clinically, the patient appeared calmer and more cooperative during treatment. Vital signs showed stabilization following the intervention, with the pulse rate decreasing to 69 beats per minute,

blood pressure remaining within the normal range, and oxygen saturation maintained at 97-99%.

Additionally, the patient also demonstrated positive changes in emotional responses. He reported feeling more accepting and at peace after undergoing SEFT therapy. He stated that the prayers and positive affirmations practiced during the tapping process enhanced his sense of spiritual connection and fostered a renewed sense of hope for recovery. Family and nursing support were also identified as important factors in maintaining the patient's motivation to continue therapy despite experiencing discomfort and physical changes related to the illness.

DISCUSSION

Pain in patients with rectal cancer is usually caused by tumor growth that invades surrounding tissues, including the pelvic nerve plexus, such as the inferior hypogastric plexus and the pudendal nerve, leading to compression or damage of nerve fibers (L. Zhang et al., 2022). In addition, the release of inflammatory mediators such as TNF- α , IL-1 β , IL-6, prostaglandins, and bradykinin activates nociceptors and contributes to peripheral sensitization (W. L. Wang et al., 2025). These mechanisms may result in neuropathic pain characterized by burning, electric shock-like sensations, or radiating pain to the perineal region and lower extremities (Mulvey et al., 2024).

Conversely, anxiety is a common psychological response following a cancer diagnosis, often triggered by fear of death, uncertainty regarding treatment outcomes, and loss of self-control (Shen et al., 2024). Physical symptoms such as pain, fatigue,

nausea, and treatment-related side effects may further exacerbate the patient's psychological condition, leading to sleep disturbances, irritability, and feelings of helplessness (Zhang et al., 2025). Spiritual factors also play a role, as reduced engagement in spiritual activities has been associated with increased levels of anxiety (Almaraz et al., 2022).

Pharmacologically, morphine exerts its effects through activation of μ -opioid receptors in the central nervous system, inhibiting pain transmission by reducing the release of neurotransmitters such as substance P and glutamate, while also enhancing neuronal hyperpolarization (Wang et al., 2022). Furthermore, morphine activates descending inhibitory pain pathways in the brainstem, thereby strengthening pain modulation before signals reach the cerebral cortex (Swingler et al., 2025).

In contrast, Slow Deep Breathing (SDB) promotes

parasympathetic activity through vagal nerve stimulation, as indicated by increased heart rate variability (HRV) and reduced sympathetic activity (Vosseler et al., 2021). This mechanism contributes to reductions in heart rate, catecholamine levels, and hypothalamic-pituitary-adrenal (HPA) axis activity, ultimately lowering cortisol levels and inflammatory responses associated with pain perception (Laborde et al., 2022).

SEFT works by stimulating meridian points combined with cognitive-spiritual affirmations (Bach et al., 2019). The tapping process provides somatosensory stimulation that influences amygdala activity, thereby reducing emotional responses related to pain and anxiety. In addition, SEFT enhances autonomic nervous system balance by increasing parasympathetic activity and reducing stress hormone levels (Dutcher et al., 2020). This mechanism contributes to the activation of descending pain inhibitory pathways, including the Periaqueductal Gray (PAG), which plays a key role in suppressing pain transmission (Meeker et al., 2022).

The results of this study demonstrated a reduction in pain scores (VAS) from 8 to 5 and anxiety scores (HAM-A) from 28 to 19. These findings are consistent with the relaxation response theory, which suggests that activation of the relaxation response can reduce HPA axis activity and decrease the production of stress hormones (Benson et al., 2019). Previous studies have also shown that SEFT-based interventions and breathing techniques are effective in reducing anxiety, cortisol levels, and improving quality of life in patients (Bakkarang et al., 2024; Wang et al., 2024).

The combination of SDB and SEFT appears to provide a synergistic effect through modulation of the autonomic nervous system, reduction of HPA axis activity, and activation of descending pain inhibitory pathways. This approach supports the body-mind-spirit framework in holistic nursing, in which emotional regulation and enhanced spiritual meaning contribute to reduced perceptions of pain and anxiety.

CONCLUSION

The implementation of Slow Deep Breathing (SDB) and Spiritual Emotional Freedom Technique (SEFT) as complementary therapies in a patient with rectal cancer was effective in reducing pain intensity and anxiety levels. These interventions work through modulation of the autonomic nervous system, reduction of stress responses, and activation of pain-inhibitory mechanisms, while also enhancing the patient's psychological and spiritual well-being. The combination of these techniques can be recommended as a safe and practical holistic nursing intervention for patients with rectal cancer in clinical settings.

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