# Pain Coping Strategies and their Associated Factors among Adult Oncology Patients Admitted at Kenyatta National Hospital

Mary Joel*, Jostine Mutinda, and James Odero

- *Department of Medical-Surgical Nursing, Jomo Kenyatta University of Agriculture and Technology, Nairobi. Kenya.*

***Corresponding author**: Mary Joel. Email: joelmwende9@gmail.com/joelmary40@gmail.com
ORCID: 0009-0005-0596-2502

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## Abstract

**BACKGROUND**

**Physical and emotional stressors such as pain are common among patients with incurable cancer, yet little is known regarding their coping strategies and the associated factors. This study aimed to determine the pain coping strategies and their associated factors among adult oncology patients admitted at Kenyatta National Hospital.**

**METHODOLOGY**

**This study employed a mixed-method approach, combining a quantitative descriptive survey with qualitative focus group discussions to understand pain coping strategies and their associated factors. A focus group discussion (FGD) with purposive sampling was conducted with 9 patients.**

**RESULTS**

**Age, gender, household income, and residence were significantly associated with a specific number of coping strategies, including positive refrain (p=0.045), preference for emotional support (p= 0.025), and behavioural disengagement (p= 0.005), acceptance (p=0.020), denial (p= 0.026), and positive refrain (p= 0.006) respectively since (p<0.05) was considered significant.**

**CONCLUSION**

**Pain significantly influences the type of coping strategy used by cancer patients. The findings reveal that sociodemographic factors such as gender, income, and residence impact strategy selection, underscoring the need for individualised pain management approaches.**

**RECOMMENDATIONS**

**There is a need to embrace non-pharmacological coping strategies. Further, it is critical to assess patients' attitudes and perceptions towards the existing non-pharmacological pain coping strategies as these individual factors, together with the outlined sociodemographic factors, are known to impact their utilisation significantly.**

***Keywords:*** *Oncology, Pain, and Coping Strategies***.**

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## Introduction

Cancer is a global public health concern and is ranked the second most common cause of death among people after cardiovascular conditions. Cancer is a disease with distressing symptoms, including pain, which may be closely watched and managed, but sometimes, it becomes chronic as it never completely goes away. Cancer-related mortality rates are 27.3% and 24.1% among men and women, respectively, globally (1). A study assessing pain control, pain location, and coping strategies among patients treated for colorectal and lung cancer found that participants varied in their use of coping mechanisms, including the tendency to ignore pain sensations(2).

Coping mechanisms are the cognitive and behavioural efforts to manage perceived stressors, such as pain (3). In oncology, these strategies may be problem-focused, such as seeking treatment or emotion-focused, like seeking emotional support approaches. Previously, pain was defined as "an uncomfortable mental and sensory experience connected to a potential or current tissue injury." Moreover, the authors added that pain could also be physiological or pathological, and it could be regarded as a warning about a threat when it accompanies a disease (2). Pain and stress co-occur and in significant cases dependently influence the degree of their occurrences (4).

Various behavioural and psychological coping strategies have proven effective in managing stressful events, including cancer-related chronic pain. Research highlights a strong association between effective pain management and the use of both problem-focused and emotion-focused coping techniques. Problem-focused strategies involve taking active steps to change or reduce the source of stress, while emotion-focused strategies aim to regulate the emotional stress response, helping individuals maintain emotional balance (5). On the other hand, using emotion-focused techniques has a significant influence on mental and physical health outcomes in chronic stressful settings (6).

The Mini-MAC (Mental Adjustment to Cancer) scale's destructive coping dimension includes helplessness, hopelessness, and anxious preoccupation, was significantly associated with reduced functioning across multiple domains. Patients who scored higher on destructive coping reported lower physical, emotional, and social well-being, indicating that harmful coping may contribute to poorer quality of life among cancer patients (7). The disparity in effectiveness of coping strategies in pain management was worth investigating among cancer patients admitted at KNH. While several previous studies among cancer survivors have identified pain as a disturbing symptom that impacts the patient's function, it was noted that little is known about the patients' pain coping strategies of choice and the reason behind their selection of the particular strategy (8). Moreover, it was reported that approximately 60-90 % of patients diagnosed with cancer, especially among those in a more advanced cancer stage, suffer from pain. There is a consensus between physicians and patients that cancer pain is managed poorly. Due to inadequate information and a lack of relevant studies regarding coping strategies among adult cancer patients, more so, those admitted at KNH, it was important to conduct this study. This study aimed to determine the pain coping strategies and their associated factors among adult oncology patients admitted at KNH.

## Methodology

### Study design, setting and population

This study employed a cross-sectional mixed-method approach, combining a quantitative descriptive survey with qualitative focus group discussions to understand pain coping strategies and their associated factors. The study was conducted in the haemato-oncology and solid tumour wards at Kenyatta National Hospital, Nairobi, Kenya. These were cancer patients hospitalised in adult cancer wards at Kenyatta National Hospital. The cancer patients were a suitable population as they are the most affected patients by pain.

### Inclusion and exclusion criteria.

All patients diagnosed with cancer hospitalised in the oncology wards of KNH who consented to participate in the study were included, and the critically ill cancer patients were excluded. The study incorporated a sample size of 96 adult cancer patients. The study utilised the census sampling method and included all adult cancer patients who met the inclusion criteria. A focus group discussion (FGD), purposively sampled, was conducted with nine patients to explore the associated factors influencing coping strategy choices.

## Data collection methods

The study used structured interviewer-administered questionnaires and a focus group discussion guide to collect the quantitative and qualitative data, respectively. The questionnaire was structured in two sections: a section that captured the participants' sociodemographic data and the second section, which comprised 30 questions adopted from the Coping Orientation to Problems Experienced (Brief-COPE) Inventory. The Brief COPE tool, developed by Carver in 1997, is a 28-item self-report questionnaire designed to assess a broad range of coping responses (8). It consists of 14 subscales, each with two items, covering both adaptive and Maladaptive strategies (8). The research questionnaire was pretested by involving 10 % of the sample size, conducted among gynaecological cancer patients in KNH. Researcher-administered questionnaires reduced self-report bias with the application of triangulation of quantitative and qualitative data, enhancing the data validity.

## Data analysis

Quantitative data were analysed using SPSS version 29.0 to draw descriptive statistics, measure associations, and test for associations. Qualitative data were analysed using manual thematic analysis, where transcripts from the focus group discussion were coded and categorised into themes and sub-themes.

## Ethical considerations

Ethical approval was granted by the Kenyatta National Hospital- University of Nairobi Ethical Research Committee (KNH-UON ERC), KNH-UON Ethical Research Committee, approval number: P520/06/2023, and a research permit was provided by the National Commission for Science, Technology & Innovation (NACOSTI).

All participants gave informed consent before participation. Confidentiality and privacy were maintained throughout the study, upholding autonomy, beneficence and non-maleficence.

# Results

The quantitative aspect of the study had a reasonable response rate of 97.92%. Ninety-four out of the targeted 96 questionnaires were completed.

## Sociodemographic characteristics

Figure 1 outlines that more than half, 61.7% (58), of the participants had solid tumours, and the remaining, 38.3% (34), had the haemato-oncology type of cancer.

**Table 1:**
*Sociodemographic Characteristics*

| Variable | Characteristic | n (%) | Variable | Characteristic | n (%) |
|---|---|---|---|---|---|
| Gender | Male | 41(43.6) | Religion | Christian | 83(88.3) |
| | Female | 53(56.4) | | Muslim | 11(11.7) |
| | Total | 94(100.0) | | Total | 94(100.0) |
| Age | 18-27 years | 13(13.8) | Education | ≤Primary | 7(7.4) |
| | 28-37 years | 43(45.7) | | Secondary | 25(26.6) |
| | 38-47 years | 25(26.6) | | ≥College | 62(66.0) |
| | ≥48 years | 13(13.8) | | Total | 94(100.0) |
| | Total | 94(100.0) | Income | ≤KSh 20000 | 13(13.8) |
| Marital status | Single | 15(16.0) | | 20001-40000 | 45(47.9) |
| | Married | 67(71.3) | | 40001-60000 | 27(28.7) |
| | Separated | 9(9.6) | | >60000 | 9(9.6) |
| | Widowed | 3(3.2) | | | |
| | Total | 94(100.0) | | | |
| Residence | Urban | 51(54.3) | | | |
| | Rural | 43(45.7) | | | |
| | Total | 94(100.0) | | | |

## Pain coping strategies

The patients' coping strategies were assessed using a 16 Likert scale (0- Not at all, 1 A little bit, 2 somewhat, 3 Quite a bit, and 4 Very much) statements adopted from the BRIEF COPE assessment tool. Tables 2 and 3 outline that positive refraining (x=3.25), denial (x=3.20), and emotional support (x=3.11) coping strategies are the most utilised strategies, outlining a mean of more than 2.5, which is the cut-off.

## Factors influencing the selection of pain coping strategies

Chi-square of independence tests were used to determine associations between categorical variables and coping strategies. Age, gender, household income, and residence were significantly associated with a specific number of coping strategies, including positive refrain (p-value =0.045), preference for emotional support (P-value = 0.025), and behavioural disengagement (P-value= 0.005), acceptance (0.020), denial (P-value = 0.026), and positive refrain (P-value= 0.006) respectively since ($p<0.05$) was considered significant. The findings, however, showed that the type of cancer was non-significantly associated with the outlined coping strategies.

Table 3 outlines that negative and positive behavioural disengagement coping strategies were underutilised, following an average mean score of 1.63 and 2.02, respectively. A score of 2 indicates that the strategy was somewhat utilised.

## Focus group discussion findings

A focus group discussion among nine cancer patients established several important factors influencing this population's selection of coping strategies, different patients use different management or coping pain practices.

The outlined factors were thematically classified into the level of pain and individual characteristics.

## Pain level

The level of pain experienced by patients was one of the most reported factors that mainly influenced the selection of specific pain management strategies, which is dependent on the patient's characteristics (1).

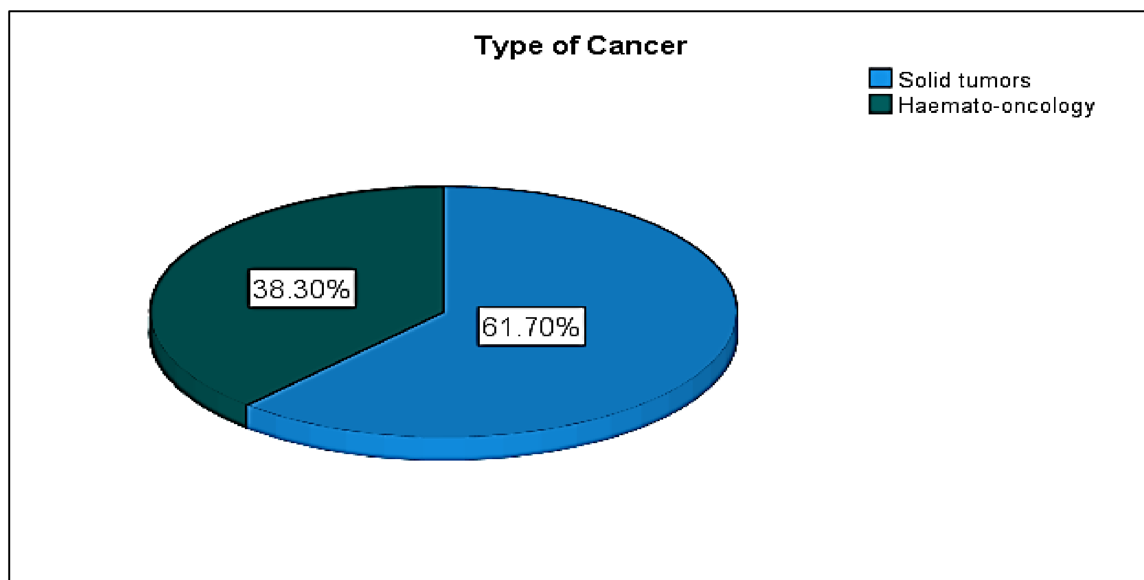


**Figure 1**
*Types of Cancer among participants*

Most of the participants noted that the level of pain one experiences plays a critical role in determining the type of coping strategy one will choose. P1. For example, he said:

"*Pain matters; if I have a high level of pain, I would go for medication directly to relieve the pain rather than giving up.*"

***Table 2:***
*Brief Description of Emotional Support, Positive Reframing, Acceptance Coping, and Self-Blame Strategies*

| **Emotional support coping strategies** | **1 n (%)** | **2 n (%)** | **3 n (%)** | **4 n (%)** | **x** |
|---|---|---|---|---|---|
| 1. I've been getting emotional support from others. | 1(1.1) | 18(19.1) | 25(26.6) | 50(53.2) | 3.32 |
| 2. I've been getting help and advice from other people | 9(9.6) | 8(8.5) | 38(40.4) | 39(41.5) | 3.14 |
| 3. I've been trying to find comfort in my religion or spiritual beliefs. | 9(9.6) | 29(30.9) | 22(23.4) | 34(36.2) | 2.86 |
| | | | | | 3.11 |
| Positive Refraining coping strategies | 1 n (%) | 2 n (%) | 3 n (%) | 4 n (%) | x |
| 4. I've been taking action to try to make the situation better. | 9(9.6) | 8(8.5) | 2526.6) | 52(55.3) | 3.28 |
| 5. I've been trying to see it in a different light, to make it seem more positive. | 4(4.3) | 16(17.0) | 30(31.9) | 44(46.8) | 3.21 |
| | | | | | 3.25 |
| Acceptance coping strategies | 1 n (%) | 2 n (%) | 3 n (%) | 4 n (%) | x |
| 6. I've been concentrating my efforts on doing something about the situation I'm in. | 18(19.1) | 52(55.3) | 19(20.2) | 5(5.3) | 2.12 |
| 7. I've been trying to come up with a strategy about what to do. | 19(20.2) | 55(58.5) | 14(14.9) | 6(6.4) | 2.07 |
| 8. I've been accepting the reality of the fact that it has happened. | 19(20.2) | 57(60.6) | 15(16.0) | 3(3.2) | 2.02 |
| | | | | | 2.07 |
| Self-blame coping strategies | 1 n (%) | 2 n (%) | 3 n (%) | 4 n (%) | x |
| 9. I've been criticising myself | 1819.1) | 33(35.1) | 34(36.2) | 9(9.6) | 2.36 |
| | | | | | 2.36 |
| Denial coping strategies | 1 n (%) | 2 n (%) | 3 n (%) | 4 n (%) | x |
| 10. I've been giving up trying to deal with it. | 3 (3.2) | 10 (10.6) | 34(36.2) | 47(50.0) | 3.3 |
| 11. I've been refusing to believe that it has happened. | 23(24.5) | 2 (2.1) | 18(19.1) | 51(54.3) | 3.03 |
| 12. I've been giving up the attempt to cope. | 8 (8.5) | 10 (10.6) | 27(28.7) | 49(52.1) | 3.24 |
| | | | | | 3.20 |

***Table 3:***
*Behavioural Disengagement Coping Strategies*

| **Negative behavioural disengagement coping strategies** | **1 n (%)** | **2 n (%)** | **3 n (%)** | **4 n (%)** | **x** |
|---|---|---|---|---|---|
| 13. I've been using alcohol or other drugs to make myself feel better | 55(58.5) | 35(37.2) | 3(3.2) | 1(1.1) | 1.47 |
| 14. I've been saying things to let my unpleasant feelings escape. | 49 (52.1) | 25 (26.6) | 11 (11.7) | 9 (9.6) | 1.79 |
| | | | | | 1.63 |
| Positive Behavioral disengagement coping strategies | 1 n (%) | 2 n (%) | 3 n (%) | 4 n (%) | x |
| 15. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, turning to work, sleeping, or shopping. | 35 (37.2) | 45 (47.9) | 12 (12.8) | 2 (2.1) | 1.80 |
| 16. I've been trying to find comfort in my religion or spiritual beliefs. | 17 (18.1) | 50 (53.2) | 14 (14.9) | 13 (13.8) | 2.24 |
| | | | | | 2.02 |

"*Yes, similar case with me, if I am in so much pain, I would choose medication over everything*." P3 affirmed,

P2 also agreed with them and noted:

"*There is this drug called morphine, it works miraculously, every time I feel so uncomfortable, it manages my pain so well as compared to any other kind of coping strategies we have encountered in the questionnaire*."

## Theme two: Type of pain

Patients reported having experienced different types of pain, thus utilising different coping strategies dependent on the type of pain or distress experienced.

**Sub-theme 1**: **Coping with psychological distress.** For psychological distress, patients reported denial as a coping strategy:

*"When I got the results indicating that I had rectal cancer, I almost collapsed. I cried uncontrollably as I lost the hope of life."*P1

**Sub-theme 2: Coping with psychological Pain.** For psychological pain, patients reported getting support from the church and family:

*"My family members have always been by my side."*P1

*"The church members visit and pray with me."* P2

*"Stories of people who have recovered from the condition gave me encouragement."* P3

*"The hospital provide counselling services."* P4

**Sub-theme 3: Coping with physical pain-** Patients reported physical pain from cancer itself from the treatment interventions:

*"I experience a lot of pain from the growth. I always take painkillers."*P2

*"Whenever I go for radiotherapy, I experience pain from the radiation burns. I buy Panadol and come to the hospital for prescription medicine… I can't tell their names, but they are effective."*P4.

**Sub-theme 4: Coping with social distress**

Patients reported social isolation as their coping strategy:

*"Many friends have blacklisted me. They don't care to call, and if they want to know my progress, they ask other people."*P3

## Theme three: Availability of resources

The available resources determined the coping strategies:

*"My children have been quite supportive."*P1

*"I always buy Panadol as it is available in chemists."* P2

*"The church contributes to me."* P4.

*"Sadly, this being a public hospital, it sometimes lacks drugs, forcing us to buy drugs from private hospitals."*P3.

***Table 4:***
*Association between Sociodemographic Factors and Pain Coping Strategies (P-values)*

| | Utilised Coping strategies | | | | | | |
|---|---|---|---|---|---|---|---|
| Factors | **Preference for emotional support** | **Positive refrain** | **Acceptance** | **Self-blame** | **Denial** | **Negative behavioural disengagement** | **Positive behavioural disengagement** |
| Type of Cancer | 0.993 | 0.279 | 0.597 | 0.842 | 0.083 | 0.224 | 0.291 |
| Age | 0.370 | 0.045** | 0.518 | 0.184 | 0.197 | 0.138 | 0.639 |
| Gender | 0.025** | 0.055 | 0.843 | 0.176 | 0.247 | 0.005** | 0.923 |
| Education | 0.804 | 0.394 | 0.930 | 0.696 | 0.349 | 0.480 | 0.746 |
| Household Income | 0.927 | 0.646 | 0.020** | 0.509 | 0.026** | 0.132 | 0.780 |
| Residence | 0.727 | 0.006** | 0.474 | 0.181 | 0.120 | 0.277 | 0.499 |

** Correlation is significant at the 0.05 level (2-tailed).

## Discussion

This study showcased the various pain coping strategies, with some being highly used while some were underutilised. The results underscored positive reframe coping strategy, denial coping strategy, and emotional support coping strategies as the most utilised coping strategies among cancer patients. Findings of emotional support and positive refraining coping strategies were in line with findings elsewhere (9), on pain coping strategies among newly diagnosed patients with gastrointestinal and lung cancer where denial was the most utilized coping strategies of choice contrasts with findings by (9), who, in their study, reported acceptance as one of the utilized coping strategies.

The findings from this study emphasise the multifactorial characteristic of pain coping among oncology patients, where psychological, social, and spiritual dimensions interplay with physiological responses. Frequent use of emotional support and denial strategies indicates a reliance on emotion-focused coping in response to the uncertainty and emotional burden associated with cancer (10). Moreover, the significant association between gender and emotional support use highlights existing gender norms and expectations around emotional expression and help-seeking behaviours, particularly among women (11). These insights suggest the necessity of gender-sensitive interventions in oncology care that recognise distinct coping needs and patterns (12, 13).

Another critical dimension highlighted is the influence of perceived resource availability, both tangible, such as medication and intangible, such as social or spiritual support, on the choice of coping strategy (14). Patients frequently cited challenges in accessing pain medication or supportive care services, leading to an increased reliance on non-pharmacological strategies such as prayer, distraction, or social withdrawal (15). These findings highlight systemic gaps in comprehensive pain management services and the need for policies that prioritise holistic, accessible, and culturally sensitive support systems. Integrating psychosocial support and community-based resources into routine oncology care could enhance adaptive coping and reduce reliance on maladaptive strategies such as denial or behavioural disengagement.

Sub-Saharan Africa and other middle and lower-income countries from the Asian and South American continents are still reliant on pharmacological interventions for pain management, with significant hurdles, including limited access to drugs (16). Opioids such as morphine, oxycodone, and fentanyl are commonly prescribed but have had extensive side effects, including dependency, tolerance, and other respiratory suppression effects. In recent developments, adjuvant analgesics such as antidepressants and anticonvulsants have been added to manage neuropathic pain (17). Adjuvant analgesics act to modulate pain pathways and provide relief in cases where traditional analgesics are not effective.

Although underutilised in the African setting, as our study established, integrative and complementary therapies are key in oncology-related pain management. Acupuncture, initiating an endogenous opioid release, and pain modulation are critical in pain management (18). A study conducted elsewhere (19) indicated that acupuncture is essential in reducing pain intensity, although with no established effect on overall survival. Moreover, physical therapies such as massage, yoga, and exercises are beneficial in pain management, although these are utilised more in developed economies (20). Precisely, massage has been evidenced to reduce anxiety and pain, enhancing the patient's relaxation and blood circulation. Moreover, moderate physical activity improves pain management by reducing tissue inflammation, initiating endorphin production, and improving the body's physical function (21).

The social environment has been established to be key to pain-coping behaviour. Similar to this study, patients with sufficient social support from their families, friends, or immediate social support groups have better pain-coping outcomes along with positive psychological outcomes (22). Importantly, support care interventions like counselling and support groups are key in the provision of emotional support and practical advice that is critical in helping patients cope and navigate through cancer pain-related challenges. Similar to the results of our study, spiritual and religious coping mechanisms have been applied in various settings to improve coping (23). Active engagement in spiritual practices, including meditation and prayers, has been perceived to give comfort and significantly reduce pain perception.

In contrast to the findings elsewhere (1), which identified education as a significant factor influencing the selection of a certain coping strategy, the current study did not find a significant association. Furthermore, the current findings contrast with those from a study, which reported that individuals with higher educational levels were more likely to utilise behavioural activity pain coping strategies compared to those with lower educational levels (24). The current study further revealed a significant association between residence and utilisation of positive refraining coping strategies and a significant association between household income and acceptance. These findings concur with findings elsewhere (1). The findings suggest that participants with higher household incomes were more likely to use denial and acceptance as coping strategies than those with lower incomes. Additionally, participants living in urban areas tended to use positive reframing more often.

In line with Religioni et al. (1), it is clear that patients in pain can adopt different management or coping practices to help cope with the pain, depending on certain factors, including area of residence, age, gender, and household income level. Patients mainly aim to select the most effective management strategy, which often depends on the pain level and the patient's characteristics. Considering the use of behavioural disengagement coping strategies, including praying and staying hopeful, the current study findings have revealed findings similar to those by (25). The similarity between the current findings and those by Religioni et al. (1) and Nipp et al. (9) may be attributed to the fact that individuals who cope through prayer or hope often feel hopeless, which can lead to pain catastrophizing and increased disability.

## Study Limitations

Given that the study was conducted in a single geographic location with a relatively small sample size, the generalizability of the findings to the broader population of oncology patients nationwide is limited. Since only one FGD was conducted due to logistical and ethical limitations in an inpatient oncology setting, saturation was not fully achieved, therefore providing preliminary insights for future research.

## Conclusion

Pain is a critical symptom that can significantly influence the type of coping strategy. Contradicting findings on the same, however, cannot be ignored. The study revealed that several strategies, including emotion-focused and problem-focused, are utilized in a bid to cope with cancer-related pain. Problem-focused involves constructive actions for changing or reducing stressful scenarios; emotion-focused strategies, on the other hand, include strategies that help regulate the emotional consequences of stressful conditions and establish affective and emotional balance by controlling emotions from stressful situations.

With an acceptable high response rate, it is worth noting that the current study has revealed a positive significant association between age, gender, household income, and residence with

specific coping strategies. The study, however, showcased that participants' level of education and the type of cancer were not significantly associated with the selection of coping strategies. The qualitative aspect of the study established that the level of pain, type of pain and availability of resources were deemed significant factors influencing the selection of coping strategies.

## Recommendations

Researchers should conduct further studies on oncology patients' attitudes and perceptions toward existing coping strategies

Healthcare providers should use the reported findings as guidelines to establish effective platforms for embracing non-pharmacological pain coping strategies among cancer patients.

The hospital administration, the Ministry of Health-Kenya, and key oncology stakeholders should review and establish supportive policies and strategies to enhance the utilisation of non-pharmacological pain coping strategies as complementary therapies for cancer patients.


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## Author information


- Mary Joel
  Email:joelmary40@gmail.com
  joelmwende9@gmail.com
  ORCID: 0009-0005-0596-2502
- Jostine Mutinda
  Email: jostinem2013@gmail.com
  ORCID: 0009-0005-4651-9099
- James Odero
  Email: jochieng@jkuat.ac.ke
  ORCID: 0009-0007-8757-7783


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