HEALTH-RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY

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RESEARCHERS

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ABSTRACT

This study evaluate the Health-Related Quality of Life (HRQoL) among cancer survivors following radiation therapy, focusing on the interplay between treatment side effects, demographic variables, and overall well-being. Using a quantitative descriptive design and a modified World Health Organization questionnaire (WHO), data were collected from 50 cancer survivors in La Union, Philippines through snowball sampling. The findings revealed that respondents reported moderate amount of satisfaction across various HRQoL domains, including physical, psychological, social relationship, and environmental. Fatigue and emotional distress were noted as major concerns, with no statistically significant differences in HRQoL found when grouped by age, sex, diagnosis, or socioeconomic status such as highest educational attainment, monthly income, and employment. The study underscores the importance of supportive care, tailored interventions, and comprehensive survivorship programs to address the persistent challenges faced by survivors. An Information, Education, and Communication (IEC) material was developed to help improve HRQoL outcomes in this population.

Keywords: *cancer survivors, health-related quality of life, IEC material, physical functioning, psychological, social functioning, survivorship*

CHAPTER I

The Problem

Finishing radiation therapy for cancer is a great accomplishment, but what happens next? The study shows how people survive after their treatment. The not-so-simple question is how to study survival, what constitutes on living well, what contributes to that well-being, and what constitutes a return to life after cancer?

In 2022, it was estimated that there are 20 million new cancer cases and 9.7 million deaths. The estimated number of people who were alive within 5 years following a cancer diagnosis was 53.5 million. About 1 in 5 people develop cancer in their lifetime, approximately 1 in 9 men and 1 in 12 women die from the disease. The global WHO survey on UHC and cancer shows that only 39% of participating countries covered the basics of cancer management as part of their financed core health services for all citizens, 'health benefit packages' (HBP). Only 28% of participating countries additionally covered care for people who require palliative care, including pain relief in general, and not just linked to cancer. Lung cancer was the most commonly occurring cancer worldwide with 2.5 million new cases accounting for 12.4% of the total new cases. Female breast cancer ranked second (2.3 million cases, 11.6%), followed by colorectal cancer (1.9 million cases, 9.6%), prostate cancer (1.5 million cases, 7.3%), and stomach cancer (970 000 cases, 4.9%). (Lyon & Geneva, 2024).

Lung cancer was the leading cause of cancer death (1.8 million deaths, 18.7% of the total cancer deaths) followed by colorectal cancer (900 000 deaths, 9.3%), liver cancer (760 000 deaths, 7.8%), breast cancer (670 000 deaths, 6.9%) and stomach cancer (660 000 deaths, 6.8%). Lung cancer's re-emergence as the most common cancer is likely related to persistent tobacco use in Asia (Lyon & Geneva, 2024).

Radiation therapy is an essential treatment method for various types of cancer. It utilizes high-energy radiation to destroy or harm cancer cells, preventing them from multiplying and spreading. While the use of radiation therapy has greatly enhanced survival rates, the long-term effects on cancer survivors are becoming an increasingly studied area. With advancements in cancer treatment, more people are beating cancer, but many encounter a variety of side effects or late effects from radiation therapy that can impact their overall well-being (King et. al., 2023). Early side effects happen during or shortly after treatment. These side effects tend to be short-term, mild, and treatable. They're usually gone within a few weeks after treatment ends. The most common early side effects are fatigue (feeling tired) and skin changes. Other early side effects usually are related to the area being treated, such as hair loss and mouth problems when radiation treatment is given to this area. Late side effects can take months or even years to develop. They can occur in any normal tissue in the body that has received radiation. The risk of late side effects depends on the area treated as well as the radiation dose that was used. Careful treatment planning can help avoid serious long-term side effects. It's always best to talk to your radiation oncologist about the risk of long-term side effects (American Cancer Society, 2020)

Fatigue is feeling tired physically, mentally, and emotionally. It's very common for people with cancer and often happens with radiation therapy. Most people start to feel tired after a few weeks of radiation therapy. This happens because radiation treatments destroy some healthy cells as well as the cancer cells. Fatigue usually gets worse as treatment goes on. Stress from being sick and daily trips for treatment can make fatigue worse. Managing fatigue is an important part of care (American Cancer Society, 2022). This fatigue can have a significant impact on the quality of life of survivors, affecting their ability to work, socialize, and engage in daily activities. In addition to physical effects, radiation therapy can also have a significant impact on the emotional well-being of cancer survivors. Many survivors experience anxiety, depression, and fear of recurrence after treatment. These emotional effects can be long-lasting and can significantly impact the quality of life of survivors. Studies have shown that cancer survivors who have undergone radiation therapy are more likely to experience anxiety and depression compared to those who have not received this treatment (Smith et al., 2020).

Health-related quality of life (HRQoL) is an important aspect of cancer survivorship, encompassing physical, emotional, social, and functional well-being. Cancer survivors often face long-term physical effects such as fatigue, pain, and cognitive impairment, which can significantly impact daily life (Husson et al., 2021). Additionally, psychological distress, including anxiety and depression, is common among survivors, often resulting from concerns about recurrence, body image changes, and the emotional burden of their experience (Smith et al., 2020). Social relationships may also be affected, as survivors navigate changes in their roles, work, and interpersonal connections. Support systems, including family, healthcare providers, and survivorship programs, play a critical role in enhancing HRQoL by providing emotional and practical assistance (Arndt et al., 2020). Interventions such as physical activity, cognitive behavioral therapy, and tailored rehabilitation programs have been shown to improve HRQoL outcomes in cancer survivors. Understanding the multifaceted nature of HRQoL is essential for developing comprehensive survivorship care plans that address the unique needs of this population (Foster et al., 2021).

The "physical meaning" in cancer survivors refers to the tangible, observable physical changes and health effects resulting from the cancer and its treatment, which can impact their quality of life. These changes can be both acute, occurring during treatment, and chronic, persisting long after treatment is complete. Common physical issues include fatigue, pain, cognitive difficulties, and potential second cancers (Wei, 2021).

The psychological meaning for cancer survivors encompasses various experiences, including distress, well-being, and growth, influenced by the balance between the challenges of cancer and available resources. This can involve shifts in priorities, increased self-awareness, and the redefinition of what constitutes a "normal" life. Additionally, survivors may experience changes in self-concept, with some seeing cancer as a past event and others identifying with their survivor identity Andrikowsky (2020).

Social relationships hold significant meaning as they provide emotional support, practical assistance, and a sense of belonging that can improve quality of life and well-being. Strong social networks can help individuals cope with the challenges of cancer and its treatment, and also facilitate shared decision-making and survivorship care planning (Boen, 2022).

Environmental security refers to the quality and safety of an individual's physical and social environment, which can impact their overall well-being and quality of life. This domain assesses factors such as financial resources, access to health care, physical safety and security, home environment, opportunities for acquiring new information and skills, participation in recreation/leisure activities, and the quality of the physical environment (including pollution, noise, traffic, climate, and transport) (WHO, 2020).

Studies of quality of life in cancer survivors have examined both the physical and mental health consequences of cancer and its treatments. In general, health care providers have focused largely on patients’ physical symptoms and physical health status, and less emphasis has been placed on mental health issues (Nadler, 2020). Physical symptoms vary across cancer types and treatment modalities but commonly include fatigue, sleep disturbances, pain, nausea and/or vomiting, diarrhea, neuropathy, skin rashes or toxicity, cachexia, arthralgias, myalgias, lymphedema, impaired sexual functioning, and cognitive problems (Aziz & Rowland, 2020).

According to the National Cancer Institute (NCI), the median patient age at the time of a cancer diagnosis is 66. The majority of cancer patients — 60% of them — are 65 or older. In fact, one-quarter of new cancer cases are diagnosed in people between the ages of 65 and 74. And the most common cancers occur more often in older patients. The median age for breast cancer is 61; for colorectal cancer, it is 68 and for lung cancer, it is 70. Aging increases cancer risks in our bodies in several ways. The older we are, the higher the proportion we acquire of cells with mutations. And these cells create populations of high risk for recruiting cancer-initiating cells Gudkov (2020). According to Gudkov (2020), as years pass, individuals accumulate exposure to harmful factors that can contribute to cancer risk. These include UV radiation, harmful chemicals such as those found in tobacco smoke, and certain viruses.

Additionally, unhealthy habits like overeating, drinking excessively hot tea or coffee, and consuming excessive amounts of alcohol can increase the risk. However, avoiding harmful exposures can only reduce, not entirely eliminate, the acquisition of mutations. These mutations can also arise from errors made by cells during the replication of their genetic material. Such sporadic events tend to accumulate over time. Another reason aging increases cancer risk is the gradual decline in immune function. In a healthy state, the immune system provides constant surveillance, identifying and eliminating cells that have the potential to become cancerous. As this function diminishes with age, the risk of cancer grows (Gudkov, 2020).

Health-related quality of life (HRQoL) significantly impacts the physical, emotional, and social functioning of cancer survivors post-radiation therapy. Survivors often experience diminished physical functioning, characterized by fatigue, pain, and other treatment-related symptoms that can hinder daily activities and overall mobility (Barker, 2020). Emotional functioning is also affected; many survivors report increased levels of anxiety and depression, which can stem from the stress of their diagnosis and treatment, as well as ongoing health concerns (Koul, 2021). This emotional burden can lead to feelings of isolation, further complicating their recovery process.

Socially, cancer survivors may struggle with reintegration into their communities and relationships due to changes in their physical abilities and emotional states. This can result in decreased social interactions and support systems, exacerbating feelings of loneliness and impacting their overall quality of life (Falla, 2022). Addressing these multifaceted challenges is crucial for improving the well-being of cancer survivors.

According to Mariotto (2020), it is estimated that there are more than 4 million women living in the United States with a history of invasive breast cancer as of January 1, 2022, and an additional 287,850 women will be newly diagnosed in 2022. More than 150,000 breast cancer survivors are living with metastatic disease, three-fourths of whom were originally diagnosed with stage I, II, or III cancer. The age distribution of breast cancer survivors is younger than that for survivors of other common cancers in the United States (lung, colorectum, and prostate), largely because the median age at diagnosis is younger (eg, 63 vs 71 years for lung cancer). One-half of women with early stage (I or II) breast cancer undergo breast-conserving surgery (BCS) with adjuvant radiotherapy, whereas one-third (34%) undergo mastectomy, often without chemotherapy or radiation.

The precise incidence of breast cancer-related arm lymphedema is difficult to determine because of the condition’s long latency, with incidence generally peaking 12 to 30 months after initial treatment McLaughlin (2020). It has been estimated that the condition occurs in at least one-fifth of patients after axillary lymph node dissection (ALND) and in approximately 6% of patients after sentinel lymph node biopsy (Rafn, 2022). According to Mariotto et,al. (2020), the quality of life for breast cancer survivors is shaped by the long-term effects of cancer and its treatments, psychosocial challenges, and the availability of support systems to address survivorship issues. Early intervention, personalized care, and support can improve outcomes and well-being.

One of the international cancer survivors who underwent to radiation therapy was Judy Gasson, former director of the UCLA Health Jonsson Comprehensive Cancer Center, experienced a patient-centered approach to breast cancer treatment, which significantly influenced her quality of life. This level of individualized attention not only addressed Gasson's logistical needs but also fostered a sense of control, which is critical for maintaining emotional and psychological well-being during cancer treatment. Studies indicate that patient-centered care, such as the approach Gasson received, is associated with improved quality of life by tailoring treatments to the patient's unique needs and preferences and by fostering clear communication between patients and healthcare providers. This model of care aligns with global recommendations for high-quality cancer treatment, which emphasize the importance of personalized interventions to address both the medical and psychological needs of patients (UCLA, n.d.)

In the Philippines, according to the latest statistics from the Department of Health, cancer is the third leading cause of death in the country, accounting for approximately 12% of all deaths. The most common types of cancer in the Philippines are breast, lung, colorectal, liver, and cervical cancer (DOH, 2021). Several studies have been conducted to assess the quality of life of cancer patients after receiving radiation therapy in the Philippines. Recent studies have explored the quality of life (QoL) of Filipino cancer survivors following radiation therapy. A 2024 study assessed the health-related quality of life (HRQoL) of breast cancer patients referred for radiotherapy during the COVID-19 pandemic. This cross-sectional analysis included 60 patients with a median age of 52. The study found that overall global HRQoL scores were high, with 80% of respondents achieving a score of 5.38±0.46. However, the cognitive domain showed moderate HRQoL among respondents (4.24±0.76). Notably, college degree holders and good performers were associated with higher HRQoL scores, while a longer illness duration was detrimental to HRQoL (Crisostomo and Sugui, 2024).

Another 2024 study investigated coping strategies among Filipino cancer patients undergoing radiation therapy. The study revealed that religiosity was the primary coping strategy, with a composite score of 3.92 out of 4. This was followed by problem-solving (3.63) and cognitive reappraisal (3.55). No significant differences in coping strategies were observed concerning hospital, sex, metastatic status, or intent of radiotherapy (Zaldarriaga, 2024).

One of the Filipino cancer survivor was Abbygale “Abby” Arenas de Leon a former beauty queen. Her journey as a Stage 3 HER2+ breast cancer survivor illustrates how comprehensive and personalized cancer care can lead to improved QoL outcomes. Abby’s treatment regimen, which included chemotherapy, targeted therapy, surgery, radiation, and hormone therapy, is reflective of advanced approaches that aim to not only improve survival rates but also support recovery and well-being post-treatment (MSD Ph, 2022).

In the province of La Union, Philippines, cancer incidence rates have been steadily increasing over the years. According to the La Union Provincial Health Office, there were 1,234 new cancer cases reported in 2020, with breast cancer being the most prevalent among women and lung cancer among men (LU PHO, 2021). The rising number of cancer cases in La Union highlights the need for improved cancer prevention and treatment strategies in the region. Quality of life is an important aspect of cancer survivorship, as survivors often face physical, emotional, and social challenges that can impact their overall well-being. A study conducted by (Garcia, 2020) found the importance of providing comprehensive care and support to cancer survivors in La Union. Psychosocial interventions, such as counseling and support groups, play a crucial role in improving the quality of life of survivors post-treatment. Further research is needed to explore the long-term effects of radiation therapy on cancer survivors in La Union.

Additionally, a study by Lee et al. (2020) in La Union revealed that cancer survivors in the region experienced significant physical and emotional symptoms, which affected their daily functioning and social interactions. A study conducted by the La Union Cancer Society in 2019 found that cancer survivors in the region reported a moderate to high quality of life. The study assessed various aspects of quality of life, including physical functioning, emotional well-being, social support, and spiritual well-being. The results showed that cancer survivors in La Union reported high levels of social support and spiritual well-being, which are important factors in improving quality of life. In addition to social support and spiritual well-being, access to healthcare services also plays a crucial role in the quality of life of cancer survivors. The study found that cancer survivors who had access to regular follow-up care and support services reported higher quality of life compared to those who did not have access to these services.

Promoting the survivor's capacity to self-manage their health and the emotional, psychosocial, physical, and functional sequelae of cancer and its treatment is integral to optimizing health, quality of life, and survival, 43 and is desired by survivors of cancer.44 Self-management might be combined with other models, including shared care, general practitioner-led care or nurse-led care. In the UK, for example, this combination of care forms the mainstay of the model of follow-up for some low-risk survivors of cancer. However, effective self-management requires support with evidence-based, structured programmes, and coaching by health-care clinicians or trained peers to support the proactive follow-up, adoption of healthy behaviors, and self-management skills of survivors of cancer (eg, problem-solving and goal setting) (Mayer, 2020).

Despite significant advancements in medical research and public health awareness, many individuals continue to develop cancer due to a combination of unavoidable and modifiable risk factors (Abbott, 2024). Aging is a primary non-modifiable risk factor; as individuals age, the likelihood of accumulating genetic mutations increases, elevating cancer risk. Lifestyle choices significantly influence cancer risk. Tobacco use is a leading cause, responsible for approximately 25–30% of cancer deaths. Diet and obesity contribute to 30–35% of cases, with diets low in fruits and vegetables and high in processed meats and ultra-processed foods increasing risk (Wigle, 2024). Physical inactivity and alcohol consumption are also notable contributors. Infections account for 15–20% of cancer cases, with certain viruses and bacteria increasing susceptibility (Kleeman, 2023).

Exposure to radiation, both ionizing and non-ionizing, accounts for up to 10% of cancer cases. Environmental exposures, such as pollutants and occupational hazards, further complicate cancer prevention efforts (NCI, 2021). Carcinogens like asbestos, benzene, and certain chemicals in processed foods have been linked to various cancers. Additionally, socioeconomic factors can limit access to healthcare, nutritious foods, and safe living environments, making it challenging for some individuals to adopt healthier lifestyles. While up to 50% of cancers are potentially preventable through healthy lifestyle choices, the interplay of genetic predisposition, environmental exposures, and lifestyle factors means that not all cancers can be avoided. This complexity underscores the importance of comprehensive cancer prevention strategies that address both individual behaviors and broader societal factors (NCI, 2024).

Information, Education, and Campaign (IEC) materials play a crucial role in improving the quality of life and preventing cancer by promoting awareness, education, and behavior change. These materials, which include brochures, posters, videos, and digital content, serve as powerful tools to disseminate critical information about cancer risk factors, early detection, and healthy lifestyle choices. For instance, educating the public about the harmful effects of tobacco, the importance of regular physical activity, and the benefits of early screening can significantly reduce the prevalence of preventable cancers. Additionally, IEC materials empower individuals to make informed decisions about their health by addressing myths and misconceptions, particularly in underserved communities. According to the World Health Organization, effective health communication through IEC strategies has been shown to reduce the global cancer burden by fostering preventive behaviors and increasing access to early diagnosis and treatment services (WHO, 2023).

The purpose of this study is to evaluate the health-related quality of life (HRQoL) among cancer survivors post-radiation therapy, focusing on the interplay between treatment effects, symptom severity, and overall well-being. This research is crucial for understanding how various factors, including treatment-related toxicities and individual characteristics, influence survivors' quality of life. Additionally, the purpose of this research is to give people the following vital knowledge and information on the subject matter: the responses of the respondents, current studies or research papers, and related articles.

Thus, the results of the study would benefit the following:

This study would benefit Cancer Survivors**,** The primary beneficiaries are the cancer survivors themselves, who can gain insights into how radiation therapy affects their quality of life. Understanding these impacts can lead to better-tailored support and interventions to enhance their emotional, psychosocial, and physical well-being.

For healthcare providers, like oncologists, nurses, and mental health professionals can utilize the findings to improve care strategies. Clinicians can utilize insights from the research to tailor interventions that address specific QoL challenges faced by survivors. This research can inform them about the specific challenges faced by survivors post-treatment, allowing for more comprehensive survivorship care plans.

For policy makers, Insights from the study can aid policymakers in developing programs that address the needs of cancer survivors. The findings can inform healthcare policies aimed at improving cancer care frameworks and resource allocation. Enhanced policies could focus on funding for survivorship care and integrating psychosocial support into standard treatment protocols.

For support organizations, non-profits and advocacy groups focused on cancer survivorship can leverage this research to enhance their support services and educational resources for survivors.

For Lorma’s Radiologic Technology, understanding the long-term effects of radiation therapy can help technologists provide better patient education and support during treatment.

For future researchers, the findings can guide future research efforts by identifying gaps in current knowledge regarding the long-term effects of radiation therapy, encouraging further studies on survivorship issues across different cancer types.

Theoretical/Conceptual Framework of the Study

This study is supported by the following theories:

Zebrack's theory delineates three distinct phases: the acute phase involving diagnostics and treatment, the post-treatment survival phase, and the permanent phase of disease-free survival (Zebrack, 2024). In relation to the study, this theory examines how these stages impact survivors’ well-being and emphasizes the need for continuous support to improve their quality of life.

Resilience theory relates to the study by emphasizing how resilience helps individuals cope with treatment challenges. Radiation therapy can cause physical and emotional difficulties, but resilient survivors adapt better, leading to improved well-being. The study likely highlights how resilience reduces anxiety and depression, enhancing overall health-related quality of life (HRQoL) and emphasizing the need for emotional support in cancer recovery (Moore, 2019).

Self-efficacy theory suggests that psycho-oncology experts consider self-efficacy to be a key factor in enhancing psychosocial adjustment and facilitating more comfortable life changes for cancer patients (Jang and Kim, 2020). As indicated, high levels of self-efficacy accelerate the psycho-emotional recovery of cancer patients, catalyze positive changes in their behaviour and lead to better quality of life and adaptability of patients to the disease (Matsuda et al., 2020; Yan et al., 2022). In this way, self-efficacy may be the key determinant of an individual’s psychosocial adjustment. This aligns with research emphasizing that high self-efficacy accelerates recovery and promotes positive behavioral changes. The study highlights the importance of self-efficacy in coping with physical and emotional difficulties, suggesting that targeted interventions to strengthen it can improve survivors' overall well-being

The research paradigm of this study follows an Input-Process-Output (IPO) framework, which serves as a structured approach to examining the Health-Related Quality of Life (HRQoL) of cancer survivors after radiation therapy. The input stage involved collecting demographic information from respondents, including age, sex, diagnosis, and socio-economic status. Additionally, the study gathered data on various HRQoL aspects such as general health, physical health, psychological, social relationships, and environmental security using the World Health Organization (WHO-BREF 26) questionnaire. The process stage included the analysis and interpretation of data obtained from the survey. This involved statistical evaluation to determine variations in HRQoL based on demographic factors. The study also identifies significant differences in HRQoL among various respondent groups, ensuring that findings are evidence-based and applicable to different populations. Finally, the output stage resulted in the development of Information, Education, and Campaign (IEC) materials aimed at improving the quality of life of cancer survivors. These materials provide survivors, healthcare providers, and policymakers with valuable insights and recommendations for post-radiation therapy care.

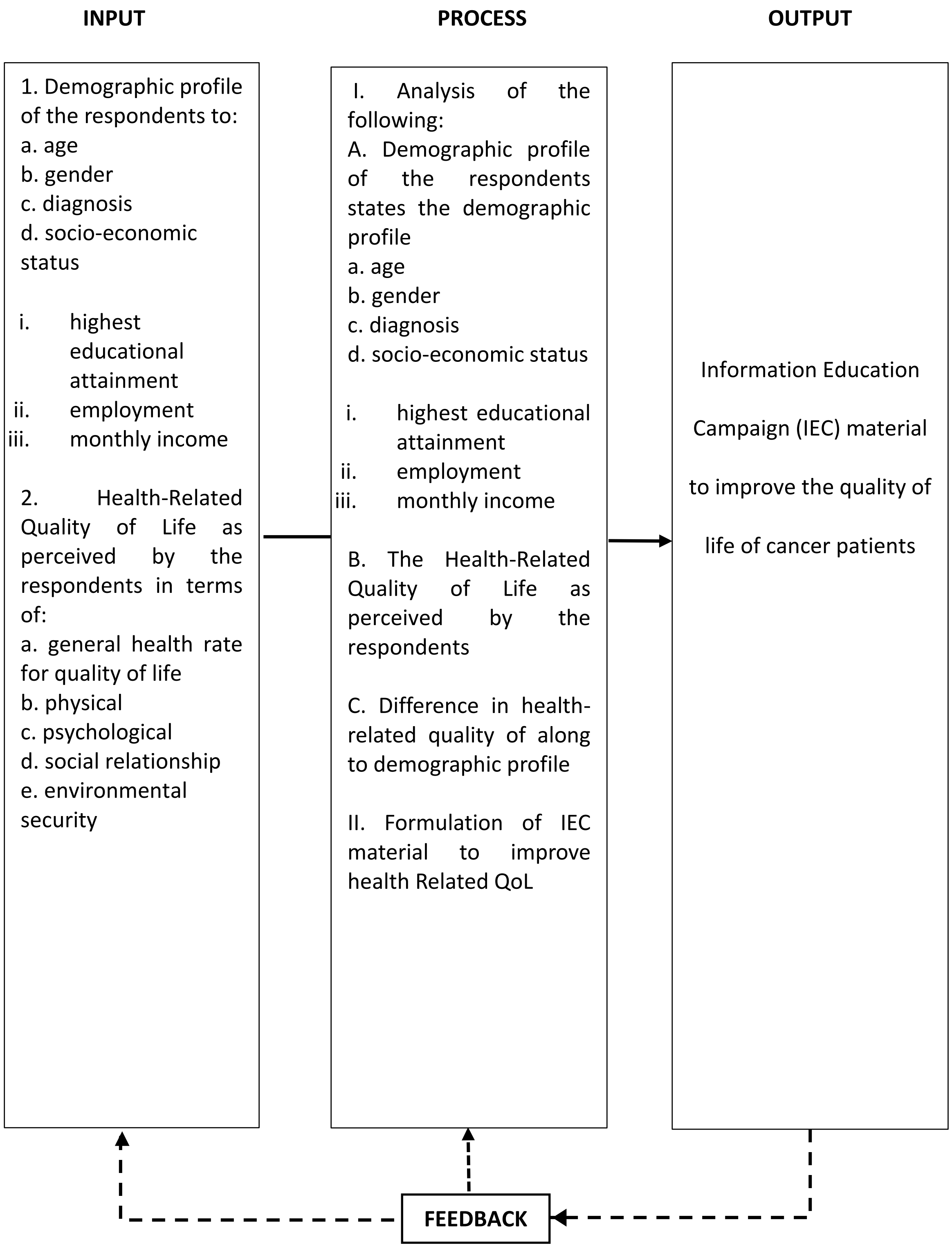

Figure 1. Research Paradigm

Statement of the Problem

This study determined the health-related quality of life (HRQoL) of cancer survivors after radiation therapy.

Specifically, it sought to answer the following questions:

1. What is the demographic profile of the respondents in terms of:
    a. age;
    b. sex;
    c. diagnosis; and
    d. socio-economic status:
        i. highest educational attainment;
        ii. employment; and
        iii. monthly income
2. What is the health-related quality of life perceived by the respondents in terms of:
    a. general health rate for quality of life,
    b. physical health;
    c. psychological;
    d. social relationship; and
    e. environmental security?
3. Is there a significant difference in health-related quality of life when cancer survivors are grouped according to their variable?
4. What information education campaign (IEC) material can be devised to improve the quality of life of cancer patients after radiation therapy?

Hypothesis

There is no significant difference in the quality of life of the respondents based on (gender, age, diagnosis, treatment regimen and socio-economic status.

CHAPTER II

Methodology

This chapter presents the research design of the locale of study, data gathering procedures, and methods used for data analysis.

Research Design

The researchers used a quantitative descriptive study in conducting this research, which allows for the measurement of variables in numerical terms without any manipulation by the researcher (Mbuva, 2023). This approach is particularly effective for providing a comprehensive overview of the health-related quality of life (HRQoL) among cancer survivors after radiation therapy. Quantitative descriptive research focuses on systematically collecting and analyzing numerical data to describe a phenomenon, making it suitable for answering questions related to the characteristics and experiences of the population being studied (Voxco, 2021). The structured nature of quantitative descriptive research also allows for replicability, enabling other researchers to utilize similar methods and tools to validate findings over time or across different groups (Enago, 2023).

In line with the study, it is significant, as it enables a comprehensive assessment of the impact of radiation therapy on survivors' quality of life. By using structured and replicable methods, the study ensures that findings are reliable and applicable across different demographics.

Population and Locale of the Study

This research utilized a non-probability sampling technique known as snowball sampling to recruit participants, specifically targeting cancer survivors who have undergone radiation therapy. This method is particularly effective in reaching this group, as these survivors are often interconnected through support networks, both in-person and online, as well as through shared healthcare experiences.

The process began by identifying a small number of eligible cancer survivors who expressed interest in participating. These initial respondents were asked to refer other survivors they know who also meet the study's criteria. This referral process continued, creating a "snowball" effect, which aids researchers in accessing populations that may be difficult to reach otherwise. The key advantage of this method lies in its ability to leverage existing social networks to gather data from individuals who fulfill the inclusion criteria.

The researchers aimed for a final sample size of approximately 50 cancer survivors in City of San Fernando, La Union. There was a 1 respondent from Barangay Cabarsican, 1 respondent from Barangay Cadaclan, 2 respondents from Barangay Dalumpinas Oeste, 1 respondent from Barangay Pagdalagan, 5 respondents from Barangay Poro, 4 respondents from Barangay San Vicente, 6 respondents from Barangay Sevilla, 3 respondents from Barangay Sacayad, 4 respondents from Barangay Sacyud, 2 respondents from Barangay Lingsat, 2 respondents from Barangay Carlatan, 2 respondents from Barangay Madayegdeg, 1 repondent from Barangay Ilocanos sur, 3 respondents from Barangay Camansi, 2 respondents from Barangay Canaoay, 1 respondent from Barangay Pacpaco, 3 respondents from Barangay Pagdaraoan, 2 respondents from Barangay San Agustin, 2 respondents from Barangay Biday, 4 respondents from Barangay Catbangen.

This target size was deemed sufficient for both statistical validity and the in-depth analysis of the experiences reported by respondents. While the snowball sampling technique may have resulted in a sample size that was somewhat higher or lower than this goal, the researchers made concerted efforts to recruit around 50 respondents.

This focused sample enabled the study to explore a diverse range of experiences and outcomes concerning health-related quality of life (HRQoL) following radiation therapy. By doing so, the research sought to enrich the understanding of the challenges and needs faced by cancer survivors in their recovery journey.

Data Gathering Tool

The questionnaire was partially adapted with modification from World Health Care Organization Quality of Life (WHOQOL BREF 26) questionnaire. To evaluate the HRQoL of cancer survivors after radiation therapy. The first part of the questionnaire collected essential demographic information about the participants, including age, sex, diagnosis, treatment regimen, and socio-economic status.

Part 2 featured the World Health Organization questionnaire, which includes 26 items measuring various aspects of HRQoL. The items were scored on a 5-point Likert scale in Physical Health, where 5= Very good, 4= Good, 3= Neither poor nor good, 2= Poor, 1= Very poor. For Psychological Health, the items were scored on a 5-point Likert scale, where 5= An extreme amount, 4= Very much, 3= A moderate amount, 2= A little, 1= Not at all. For Social Relationship, were also scored on a 5= An extreme amount, 4= Very much, 3= A moderate amount, 2= A little, 1= Not at all. Lastly, For Environmental Security, the items were scored on a 5-point Likert scale, where 5= An extreme amount, 4= Very much, 3= A moderate amount, 2= A little, 1= Not at all. This section included functional scales that measure general health, physical health, psychological health, social relationships, and environmental security. This section included functional scales that measure general health, physical health, psychological, social relationships, and environment. This structured approach not only enhances the reliability of responses but also enables comparisons across different patient groups and over time. Furthermore, the use of this validated instrument ensures that the data collected will be relevant and applicable to the specific context of cancer survivorship after radiation therapy, ultimately contributing to more effective interventions and support strategies tailored to this population. Global quality of life scale was also be included at the end wherein two items measuring the general level of quality of life using a 5-point rating scale was questioned.

Data Gathering Procedure

The questionnaire was developed, passed to the research adviser for checking in order to get clarity on its meaning and distribution. After ensuring the said questionnaire is correct and easy to administer, it was endorsed to the Campus for the Health Sciences, Graduate studies and Research Institute (CHS- GSRI) of Lorma Colleges then to the LORMA Colleges- Research Ethics Committee (LC-REC). The study was submitted for her approval to the Dean of the College of Radiologic Technology. The researchers presented a letter of consent to the respondents, informing them of voluntary participation, non-maleficence, confidentiality, anonymity, and the relevance of the components. Qualified respondents were asked by the researchers if they would like to participate in the study or not. The participation was voluntary and they are free to withdraw anytime, even if they have given their consent, without any harm or will not affect any relationship with the researchers.

When the respondents gave their voluntary participation, a letter of consent, signed by the Dean of the College of Radiologic Technology, was presented to the respondents. This letter informed them that the research study being conducted was self-funded by the researchers. The letter clearly stated that the data acquired from them can only be accessed by the researchers alone and be kept with outmost care and confidentiality. Data sharing was limited to the researchers only. Furthermore, the researchers disabled the "collect email addresses" setting so that Google Forms did not collect any email addresses. The informed consent offers contact information to the respondents for use in any case of any comments or inquiries. The respondents of this study were made aware that they will not be receiving any incentives nor reimbursement upon their participation in the study.

After approval of the respondents who participated in this study, respondents were asked to complete the survey within a timeframe of 48 hours from the date they received it. Once all data were collected, the researchers analyzed and interpreted the responses provided. The survey questionnaire was provided to the researchers through pen and paper basis for the respondents who can meet the researchers in person, and through Google Form, for the respondents who did not want to meet face to face. After gathering the data, the researchers analyzed and interpreted the data provided by the respondents.

Treatment of Data

As soon as the assessment was completed, the data were collected, tabulated, analyzed, and interpreted.

The demographic profile of the respondents was treated with frequencies and percentages. The health-related quality of life as perceived by the respondents was obtained through weighted mean. The sets of data were given their proper degree of importance and it is shown by the following point value, statistical range and descriptive equivalent rating.

In line with the study, single-factor ANOVA was used to determine the significant difference in health- related quality of life and the demographic profile.

The table shows the statistical values used in this study as follows:

Table 1
Data Categorization

POINT VALUE	STATISTICAL RANGE	DESCRIPTIVE EQUIVALENT
5	4.29 – 5.00	Very good / Very satisfied / Not at all / Extremely / Completely / Never
4	3.40 – 4.19	Good / Satisfied / Very much / Mostly / Seldom
3	2.40 – 3.39	Neither poor nor good / Neither satisfied nor dissatisfied / Dissatisfied / Very dissatisfied / A moderate amount / Moderately / Quite often
2	1.80 – 2.59	Poor / Dissatisfied / A very much / A little / Very often
1	1.00 – 1.79	Very poor / Very dissatisfied / An extreme amount / Not at all / Always

CHAPTER III

Results and Discussion

The presentation, analysis, and interpretation of the data acquired in this study are all included in this chapter. According to the methodology, statistical tools are utilized to determine the health-related quality of life of cancer survivors after radiation therapy.

Demographic Profile of the Respondents

This study focused on interviewing cancer survivors who underwent radiation therapy, a total of 50 respondents. After giving consent formed indicating their willingness to participate in the study, these cancer survivors completed their questionnaires.

The table 2 below presents the demographic profile of the respondents based on age, sex, diagnosis, and socio-economic status.

Table 2
Demographic Profile of the Respondents

Demographic Profile		Frequency	Percentage
SEX			
Male		17	34%
Female		33	66%
	Total:	50	100%
DIAGNOSIS			
Breast Cancer		24	48%
Lung Cancer		10	20%
Colon Cancer		3	6%
Prostate Cancer		13	26%
Others		0	0%
	Total:	50	100%
Highest Educational Attainment (SES)			
Elementary Graduate		12	24%
High School Graduate		11	22%
Vocational Graduate		9	18%
Undergraduate		10	20%
College		8	16%
	Total:	50	100%

Table 2
Demographic Profile of the Respondents (Cont...)

Demographic Profile	Frequency	Percentage
Monthly Income (SES)		
Below Php 10,000	8	16%
Between Php 11,000 – 15,000	9	18%
Between Php 16,000 – 20,000	10	20%
Between Php 21,000 – 25,000	15	30%
More than Php 25,000	8	16%
Total:	50	100%
Employment (SES)		
Government	10	20%
Public	11	22%
None	13	26%
Others	16	32%
Total	50	100%

***Legend**: SES= Socioeconomic Status*

Table 2 shows above that the demographic profile of the 50 respondents, reveals several important trends. The majority fall within the 40–59 age group (46%), followed by those aged 18–39 (28%) and 60–90 (26%), indicating that cancer predominantly affects middle-aged adults in this sample. Females comprise a larger portion (66%) compared to males (34%), which corresponds with the high incidence of breast cancer (48%) among the diagnoses. Lung cancer (20%), colon cancer (12%), prostate cancer (6%), and other types (14%) are also represented, but breast cancer remains the most common diagnosis, reflecting national patterns where breast cancer is the leading malignancy among women.

Socioeconomic data shows that a significant portion of respondents have low monthly incomes, with 16% earning below Php 10,000 and 18% earning between Php 11,000–15,000. Only 16% earn more than Php 25,000 monthly, suggesting that most respondents belong to lower-income brackets. In terms of educational attainment, the largest groups are high school graduates (22%) and vocational graduates (24%), while only 16% have reached college level. Employment status further highlights socioeconomic challenges, as 36% are unemployed, while the rest are distributed among government (20%), private (22%), and self-employment (22%).

These findings are supported by recent studies. For instance, De Guzman et al. (2021) found that cancer in the Philippines is most prevalent among middle-aged adults, with breast cancer being the most common diagnosis among women. Garcia et al. (2022) reported that lower socioeconomic status is linked to delayed diagnosis and poorer cancer outcomes, while Santos et al. (2021) emphasized that lower educational attainment is associated with reduced health literacy and lower rates of preventive screening. The high unemployment rate among respondents is consistent with research showing that a lack of stable employment can further limit access to timely cancer care and support services.

Perceived health-related quality of life

This section presents the data on the perceived health-related quality of life among cancer survivors, focusing on key domains such as physical, psychological, social relationships, and environmental security.

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General Health

The General Health states that it reflects the individual’s overall perception of their quality of life and satisfaction with their health.

Table 3 presents the health-related quality of life perceived by the cancer survivor in terms of general health.

Table 3. Health-related Quality of Life in terms of General Health

INDICATORS	MEAN	DESCRIPTIVE EQUIVALENT (DE)
1. How would you rate your quality of life?	3.74	Good
2. How satisfied are you with your health?	3.28	Neither satisfied nor dissatisfied
GENERAL WEIGHTED MEAN	3.51	**GOOD**

This shows that the overall weighted mean score for general health is 3.51, with a descriptive equivalent of “Satisfied”. The respondents reported relatively high satisfaction with their quality of life with 3.74 weighted mean. Meanwhile, “A moderate amount” of satisfaction with the respondents health with 3.28 weighted mean. This indicates that survivors may benefit from a post-treatment program that continues to support their quality of life. The difference between quality of life and satisfaction with health suggests the need for continued medical follow-ups and health education. The result reflects the capacity of individuals to adapt to their post-treatment conditions. Satisfaction in quality of life may be supported by psychological factors, family support, and effective coping mechanisms even when physical health is still in recovery.

A study by Islam (2023) results revealed that a considerable number of survivors reported challenges in these areas, with 11% having issues with mobility and self-care, 19% with daily activities, 21% with pain or discomfort, and 46% experiencing anxiety or depression. Importantly, the study found that cancer survivors with advanced-stage diagnoses and those who were physically inactive had significantly lower utility scores, indicating poorer overall health-related quality of life. Conversely, those who engaged in regular physical activity reported better outcomes. These findings align with the presented data indicating a generally "Satisfied" perception of quality of life (mean of 3.74) and a moderately positive satisfaction with health (mean of 3.28), resulting in an overall general health mean of 3.51. This emphasizes the need for integrated and holistic survivorship care that supports both physical recovery and mental well-being through activities like exercise and psychological support.

The findings imply that cancer survivors, on average, maintain a relatively positive outlook on their general health following radiation therapy. The higher rating for quality of life (3.74, "Satisfied") compared to satisfaction with health (3.28, "A moderate amount") may reflect patients' ability to adapt to lifestyle changes and psychosocial challenges despite experiencing lingering physical effects. These results highlight the importance of continuous support and tailored post-treatment care to enhance survivors' health satisfaction and quality of life. According to Rahn (2023), pelvic radiation injuries substantially impacted general health perception and sexual function, underscoring the need for post-treatment survivorship support.

Physical Health

Physical Health shows how physical well-being affects daily functioning. It includes energy and fatigue, pain and discomfort, sleep and rest, mobility, activities of daily living, dependence on medications or treatments, and ability to work.

Table 4 presents the health-related quality of life perceived by the cancer survivor in terms of physical health.

Table 4. Health-related Quality of Life in terms of Physical Health

INDICATORS	MEAN	DESCRIPTIVE EQUIVALENT (DE)
1. To what extent do you feel that physical pain prevents you from doing what you need to do?	**3.1**	A moderate amount
2. How much do you need any medical treatment to function in your daily life?	**3.04**	A moderate amount
3. Do you have enough energy for everyday life?	**2.74**	Moderately
4. How well are you able to get around?	**2.88**	Good

Table 4. Health-related Quality of Life in terms of Physical Health

INDICATORS	MEAN	DESCRIPTIVE EQUIVALENT (DE)
5. How satisfied are you with your sleep?	**2.98**	Neither satisfied nor dissatisfied
6. How satisfied are you with your ability to perform your daily living activities?	**3.24**	Neither satisfied nor dissatisfied
7. How satisfied are you with your capacity for work?	**3.32**	Neither satisfied nor dissatisfied
GENERAL WEIGHTED MEAN	**3.04**	**NEITHER SATISFIED NOR DISSATISFIED/ A MODERATE AMOUNT**

This shows that the overall weighted mean score for physical is 3.04, with a descriptive equivalent of “A moderate amount”. Most indicators such as energy levels accounts 2.74 and ease of getting around accounts 2.88- show moderate scores, indicating mild to moderate functional limitations. It can be inferred from these figure that the majority of cancer survivors who underwent radiation therapy had a neutral, moderate, and somewhat negative response to the indicators for measuring quality of life in terms of physical health this include fatigue and reduced mobility. Survivors may require physical rehabilitation and tailored activity programs and also managing physical symptoms such as fatigue, pain, and sleep disturbance remains crucial.

The indicates that the relatively low scores for energy and mobility are consistent with known side effects of radiation therapy, such as fatigue and reduced stamina. This emphasize the importance of integrating physical recovery support in survivorship care plan. According to American College of Cardiology (2020), increased post-treatment physical activity was associated with reduced fatigue an improved respiratory function among cancer patients. Fatigue levels peaks during radiation therapy and persisted radiation therapy and persisted post-treatment, necessitating structures fatigue management strategies (Dujits, 2023). Most indicators, such as energy for daily life, ability to get around, and satisfaction with sleep, fall within the "A moderate amount" range. Notably, the lowest mean score is for having enough energy for everyday life

(2.74), suggesting that fatigue remains a significant concern. The highest score is for satisfaction with capacity for work (3.32), indicating relatively better perceived function in this area.

Overall, these findings imply that while survivors can manage daily activities and work to a moderate extent, persistent physical challenges particularly fatigue and mobility may impact their full recovery and quality of life. Additionally, survivors of oropharyngeal cancer reported long-term impairments in physical functioning, including fatigue and reduced productivity, well beyond treatment completion (Warren, 2024).

Psychological Health

Psychological Health refers to the measures mental and emotional aspects of health. It includes self-esteem, body image, positive and negative feelings, thinking, learning, memory, and concentration.

Table 5 presents the health-related quality of life perceived by the cancer survivor in terms of psychological health.

Table 5. Health-related Quality of Life in terms of Psychological Health

INDICATORS	MEAN	DESCRIPTIVE EQUIVALENT (DE)
1. How much do you enjoy life?	**3.16**	A moderate amount
2. To what extent do you feel your life to be meaningful?	**3.23**	A moderate amount
3. How well are you able to concentrate?	**3.18**	A moderate amount
4. Are you able to accept your bodily appearance?	**3**	Moderately
5. How satisfied are you with yourself?	**3.66**	Neither satisfied nor dissatisfied
6. How often do you have negative feelings such as blue mood, despair, anxiety, depression?	**2.82**	Quite often
GENERAL WEIGHTED MEAN	**3.18**	**NEITHER SATISFIED NOR DISSATISFIED/ A MODERATE AMOUNT**

This shows that the overall weighted mean psychological score is 3.18, with a descriptive equivalent of “A moderate amount”. Indicators such as enjoyment of life accounts 3.16, life meaning accounts 3.23, and concentration accounts 3.18 are positive. While survivors generally maintain psychological resilience, emotional support is still needed, particularly in dealing with anxiety or depression. Mental health services, such as counseling or therapy, can be essential in enhancing emotional recovery. Psychological well-being appears relatively stable, with survivors showing strong indicators of life meaning and self-satisfaction, however, the ability to handle negative emotions is an area needing support, possibly through targeted mental health programs.

Indicators also reflect a moderate level of well-being, with a general weighted mean of 3.18. Survivors report moderate enjoyment of life, a sense of meaning, and the ability to concentrate. Satisfaction with oneself stands out with a higher score (3.66, "Satisfied"), suggesting that self-acceptance and self-esteem may be areas of relative strength post-therapy. However, the presence of negative feelings such as anxiety or depression (mean 2.82) indicates that psychological distress is still a concern for some individuals. These results highlight the importance of ongoing psychological support and interventions to address emotional challenges and enhance overall mental health among cancer survivors.

A study by Kim (2023), after curative treatment, a significant proportion of cancer survivors report symptoms of depression, anxiety, and emotional distress. Similarly to Sharma (2023), post-radiation therapy cancer survivors and their caregivers commonly express unmet psychological needs, highlighting a gap in long terms emotional care. Research shows that cancer patients have a significantly higher risk of depression and suicide, pointing to a dire need for integrated mental health care in oncology (Health editors, 2022).

Social Relationships

Social relationships states that focuses on personal and social connections. It includes satisfaction with personal relationships, support from friends, and satisfaction with sexual life.

Table 6 presents the health-related quality of life perceived by the cancer survivor in terms of social relationships.

Table 6. Health-related Quality of Life in terms of Social Relationships

INDICATORS	MEAN	DESCRIPTIVE EQUIVALENT (DE)
1. How much do you enjoy life?	**3.16**	A moderate amount
2. To what extent do you feel your life to be meaningful?	**3.23**	A moderate amount
3. How well are you able to concentrate?	**3.18**	A moderate amount
4. Are you able to accept your bodily appearance?	**3**	Moderately
5. How satisfied are you with yourself?	**3.66**	Neither satisfied nor dissatisfied
6. How often do you have negative feelings such as blue mood, despair, anxiety, depression?	**2.82**	Quite often
GENERAL WEIGHTED MEAN	**3.18**	**NEITHER SATISFIED NOR DISSATISFIED/ A MODERATE AMOUNT**

This shows that the overall weighted mean score for Social relationship is 3.11, with a descriptive equivalent of "A moderate amount". Indicators such as personal relationship accounts 3.02 mean, sex life accounts 2.88, and support from friends accounts 2.42. This indicates that while some social support exists, it may not be consistent or sufficient across all areas, particularly aspects of intimate relationships. Survivors experience moderate satisfaction, indicates that while personal ties remain, they may be strained due to physical and emotional changes post-treatment. This also implies that intervention programs should be include social reintegration. Also, peer support groups and community-building initiatives can reinforce survivor's social networks.

This can be related to the study of Tao (2024), social support can be conceptualized as one’s perception of informational, emotional, and instrumental support from existing support network members. It has been found to empower women with breast cancer to cope with stress and psychologically adapt to cancer-related stressors. The findings suggest that cancer survivors generally maintain a moderate level of satisfaction in their social relationships. While they feel adequately supported by friends (mean = 3.42, "Satisfied"), their satisfaction with personal relationships (mean = 3.02) and sex life (mean = 2.88) is somewhat lower, both falling under the "A moderate amount" category. The relatively lower satisfaction in personal relationships and sex life may indicate ongoing challenges related to intimacy, communication, or emotional connection, which are common concerns among cancer survivors due to physical, psychological, and social changes following diagnosis and treatment.

The higher satisfaction with support from friends highlights the importance of a strong social network in the survivorship phase, suggesting that peer support plays a critical role in the overall well-being of cancer survivors. Additionally, participants highlighted that the completion of treatment does not signal the end of the negative impact of cancer on their lives. Feelings of isolations, particularly from treating teams, peers, family, and friends, were prevalent (Lang, 2021). Additionally, the study of Rahn (2023), pelvic radiation injuries substantially impacted general health perception and sexual function, underscoring the need for post treatment survivorship support.

Environmental Security

Environmental security refers to evaluates the impact of the surrounding environment on well-being.It includes physical safety and security, financial resources, health and social care accessibility and quality, home environment, opportunities for learning and recreation, physical conditions (pollution, noise, climate), and transportation

Table 7 presents the health-related quality of life perceived by the cancer survivor in terms of environmental security.

Table 7. Health-related Quality of Life in terms of Environmental Security

INDICATORS	MEAN	DESCRIPTIVE EQUIVALENT (DE)
1. How safe do you feel in your daily life?	3.02	A moderate amount
2. Have you enough money to meet your needs?	3.08	Moderately
3. How well are you able to concentrate?	3.18	Moderately
4. To what extent do you have the opportunity for leisure activities?	2.84	Moderately
5. How satisfied are you with the conditions of your living place?	3.06	Neither satisfied nor dissatisfied
6. How satisfied are you with your access to health services?	3.7	Neither satisfied nor dissatisfied
7. How satisfied are you with your transport?	3.24	Neither satisfied nor dissatisfied
GENERAL WEIGHTED MEAN	**3.16**	**NEITHER SATISFIED NOR DISSATISFIED/ A MODERATE AMOUNT**

This table shows that the overall weighted mean score for Environmental security is 3.16, with a descriptive equivalent of “A moderate amount”. Indicators such as safety accounts for 3.02 mean, financial sufficiency with a mean of 3.08, concentration ability accounts 3.18 mean, leisure sufficiency accounts 2.84, access to health services has 3.7 mean, and transportation has 3.24 mean. All mean scores falls within “A moderate amount” range. This indicates that on average survivors, experience a moderate level of environmental quality and support post-treatment. Notably, the lowest mean score is for leisure opportunities (2.84), indicating this is the area where survivors feel least satisfied. The moderate scores across all domains suggest that while basic needs are being met, there is significant room for improvement, particularly in enhancing leisure opportunities and addressing socioeconomic barriers.

A study by Chu et al. (2022) emphasize that neighborhood social and built environmental factors, including safety, access to resources, and socioeconomic status, significantly impact health-related quality of life (HRQOL) for cancer survivors. They found that lower neighborhood socioeconomic status is consistently associated with lower HRQOL. A 2025 report from the European Society for Medical Oncology (ESMO) notes that optimizing geographic access to radiation facilities and supportive services—such as through telehealth and hypo fractionation, can improve individual resources, reduce travel burdens, and enhance quality of life for cancer survivors. Additionally, Chu et al. (2022) argue that neighborhood features, such as opportunities for leisure and social engagement, should be considered enabling resources within frameworks aimed at improving HRQOL for cancer survivors. This directly relates to the lowest mean score in the data for leisure activities (mean = 2.84), highlighting the need to enhance environmental supports for survivors' well-being.

Differences in Health-related Quality of Life when Cancer Survivors are Grouped According to their Variables

This section presents whether there a significant differences in health-related quality of life when cancer survivors are grouped according to their age, sex, diagnosis, highest educational attainment, employment, and monthly income.

Table 8. Difference in Health-related Quality of Life when cancer survivors are grouped according to Age

GROUP	DOMAIN	P- VALUE	DECISION
Age	Physical Health	0.71	Not Significant
	Psychological	0.81	Not Significant
	Social Relationship	0.81	Not Significant
	Environment Security	0.81	Not Significant

The table 8 shows the physical health of cancer survivors based on their age group. Fifty valid cases were examined. Respondents aged "60-90" had the highest physical health score (M = 59.5, SD = 17.98), followed by "40-59" (M = 60.0, SD = 16.04), and "18-39" (M = 55.53, SD = 17.41). However, there is no significant difference in the physical health of cancer survivors based on their age group, as determined by a One-way ANOVA, F(2, 47) = 0.3415, p = 0.7124. The P-value of 0.7124 is greater than the conventional significance level of 0.05, so we fail to reject the null hypothesis. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the physical domain of health-related quality of life among cancer survivors based on their age groups.

Psychological Health, respondents aged "60-90" had the highest psychological health score (M=65.67, SD=9.90), followed by "40-59" (M=57.70, SD=17.29), and "18-39" (M=55.53, SD=18.14). But there is no significant difference in the Psychological Health of cancer survivors based on their age group, as determined by One-way ANOVA, f(2, 47) = 0.2061, p = 0.81. The P-value of 0.81 is greater than the conventional significance level of 0.05, which leads us to fail to reject the null hypothesis. This is to state that, with the given data, there is insufficient evidence to conclude that there have been real differences in the domain of psychological health-related quality of life among cancer survivors according to their age groups.

Social relationships, respondents aged "60-90" had the highest social relationship score (M=60.92, SD=14.64), followed by "18-39" (M=60.2, SD=18.79), and "40-59" (M=57.43, SD=17.26). But there is no significant difference in the social relationship of cancer survivors based on their age group, as determined by One-way ANOVA, f(2, 47) = 0.21, p = 0.81. The P-value of 0.81 is greater than the conventional significance level of 0.05, which leads us to fail to reject the null hypothesis. This is to state that, with the given data, there is insufficient evidence to conclude that there have been real differences in the domain of psychological health-related quality of life among cancer survivors according to their age groups.

For Environmental Health, it was "60-90" respondents that attained the highest environmental health score (M=60.92, SD=14.64), followed by "18-39" (M=60.20, SD=18.79) and "40-59" (M=57.63, SD=17.27). However, there is no significant difference in the environmental health of cancer survivors based on their age group, as determined by a One-way ANOVA, F(2, 47) = 0.2061, p = 0.81. The P-value of 0.81 is greater than the conventional significance level of 0.05, which means we failed to reject the null hypothesis. Thus, the provided data is considered insufficient to conclude that there are indeed real differences in the environmental health-related domains of cancer survivors against their age groups. there is no significant difference in the physical health, psychological, social relationship, environmental of cancer survivors based on their age, as determined by a One-way ANOVA, p = 0.71 for physical health, p = 0.81 for psychological, p = 0.81 for social relationship, p = 0.81 for environmental. The P-value of 0.71 and 0.81 is greater than the conventional significance level of 0.05, so researchers fail to reject the null hypothesis. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the physical domain of health-related quality of life among cancer survivors based on their educational attainment groups.

A study by Kenzik et al. (2021) found that age was not a consistent predictor of quality of life across multiple domains in cancer survivors, supporting your findings that age does not significantly impact physical, psychological, social, or environmental well-being. Additionally, Götze et al. (2020) this large population-based study found that while age can influence certain aspects of quality of life, there were no consistent or significant differences across age groups in overall quality of life among long-term cancer survivors. Similarly to Suh et al. (2022) that reported no significant differences in quality of life scores among different age groups of cancer survivors, suggesting that age alone is not a determinant of post-cancer quality of life.

Table 9. Difference in Health-related Quality of Life when Cancer Survivors are Grouped According to Sex

GROUP	DOMAIN	P- VALUE	DECISION
Sex	Physical Health	0.56	Not Significant
	Psychological	0.75	Not Significant
	Social Relationship	0.84	Not Significant
	Environmental Security	0.69	Not Significant

This displays that the comparison of Physical Health of cancer survivors by sex. Fifty valid cases were examined. Male cancer survivors (M = 60.47, SD = 16.72) scored slightly higher than female cancer survivors (M = 57.55, SD = 16.86) on measures of physical health.

The researchers conducted an independent-samples t-test (unequal variances assumed) to compare physical health between male and female cancer survivors. Based on our results, there was no statistically significant difference in male and female physical health, t(33) = 0.584, p = 0.5629. The P-value of 0.5629 is greater than the common level of significance (0.05) and we fail to reject the null hypothesis, therefore we have insufficient evidence to claim there is a statistically significant difference in the physical domain of health-related quality of life for cancer survivors based on gender in the data provided.

The comparison of Psychological Health of cancer survivors by sex. Fifty valid cases were examined. Male cancer survivors (M = 57.82, SD = 14.39) scored slightly lower than female cancer survivors (M = 59.27, SD = 16.77) on measures of psychological health. The researchers conducted an independent-samples t-test (unequal variances assumed) to compare psychological health between male and female cancer survivors. The difference was not statistically significant, t(37) = –0.319, p = 0.75. The p-value exceeds the 0.05 threshold, so we fail to reject the null hypothesis. We therefore have insufficient evidence to claim a statistically significant difference in the psychological domain of health-related quality of life based on gender. The comparison of Social Health of cancer survivors by sex. Fifty valid cases were examined. Male cancer survivors (M = 57.35, SD = 19.86) scored slightly higher than female cancer survivors (M = 56.18, SD = 19.27) on measures of social health. An independent-samples t-test (unequal variances assumed) indicated t(32) = 0.199, p = 0.84, demonstrating no statistically significant difference between male and female survivors. Because p > 0.05, we again fail to reject the null hypothesis, indicating no sufficient evidence of a gender difference in social quality of life.

The comparison of Environmental Health of cancer survivors by sex. Fifty valid cases were examined. Male cancer survivors (M = 57.88, SD = 13.72) scored slightly lower than female cancer survivors (M = 59.73, SD = 18.47) on measures of environmental health. The independent-samples t-test (unequal variances assumed) yielded t(42) = –0.399, p = 0.692, which is not statistically significant. With p > 0.05, we fail to reject the null hypothesis, indicating no sufficient evidence of a gender difference in the environmental domain of health-related quality of life Kenzik et al. (2021). The same study also found that sex was not a significant predictor for most quality of life domains, aligning with your data showing no significant differences between male and female survivors. The study of Mols et al. (2021) found minimal differences in quality of life outcomes between male and female cancer survivors, suggesting that sex is not a major determinant of overall quality of life post-cancer. Additionally, Wang et al. (2023) this recent study analyzed sex differences in cancer survivorship and concluded that, after adjusting for other factors, sex was not significantly associated with differences in quality of life scores.

Table 10. Difference in Health-related Quality of Life when Cancer Survivors are Grouped According to Diagnosis

GROUP	DOMAIN	P- VALUE	DECISION
Diagnosis	Physical Health	0.65	Not Significant
	Psychological	0.5	Not Significant
	Social Relationship	0.82	Not Significant
	Environmental Security	0.54	Not Significant

This shows the physical health of cancer survivors based on their diagnosis. Fifty valid cases were examined. Respondents with a diagnosis of prostate cancer had the highest physical health score (M = 61.69, SD = 18.86), followed by lung cancer (M = 62.1, SD = 13.19), followed by breast cancer (M = 55.87, SD = 17.64), and colon cancer (M = 54.33, SD = 9.61).

However, there is no significant difference in the Physical Health of cancer survivors based on their diagnosis, as determined by a One-way ANOVA, F(3, 46) = 0.5577, p = 0.65. The P-value of 0.65 is greater than the conventional significance level of 0.05, so we fail to reject the null hypothesis. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the physical domain of health-related quality of life among cancer survivors based on their diagnosis groups.

For Psychological Health, respondents with colon cancer had the highest psychological health score (M = 69.00, SD = 7.48), followed by those with prostate cancer (M = 60.62, SD = 15.52), breast cancer (M = 58.79, SD = 16.63), and lung cancer (M = 53.60, SD = 16.18).

However, there is no significant difference in the psychological health of cancer survivors based on their diagnosis, as determined by a One-way ANOVA, F(3, 46) = 0.8636, p = 0.47. The P-value of 0.47 is greater than the conventional significance level of 0.05, so we fail to reject the null hypothesis. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the psychological domain of health-related quality of life among cancer survivors based on their cancer diagnosis.

For Social Health, respondents with Prostate cancer had the highest social health score (M = 60.62, SD = 22.40), followed by those with lung cancer (M = 57.50, SD = 17.57), breast cancer (M = 54.33, SD = 19.81), and colon cancer (M = 54.00, SD = 3.46).

However, there is no significant difference in the social health of cancer survivors based on their diagnosis, as determined by a One-way ANOVA, F(3, 46) = 0.3104, p = 0.82. The P-value of 0.82 is greater than the conventional significance level of 0.05, so we fail to reject the null hypothesis. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the social domain of health-related quality of life among cancer survivors based on their cancer diagnosis.

For Environmental Health, respondents with prostate cancer had the highest environmental health score (M = 64.54, SD = 16.31), followed by those with colon cancer (M = 60.67, SD = 10.66), breast cancer (M = 57.88, SD = 19.32), and lung cancer (M = 54.50, SD = 12.99).

However, there is no significant difference in the environmental health of cancer survivors based on their diagnosis, as determined by a One-way ANOVA, F(3, 46) = 0.7350, p = 0.54. The P-value of 0.54 is greater than the conventional significance level of 0.05, so we fail to reject the null hypothesis. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the environmental domain of health-related quality of life among cancer survivors based on their cancer diagnosis.

A study by Kim et al. (2022) focuses multicenter cross-sectional study found that the type of cancer diagnosis was not a consistent predictor of overall quality of life among survivors. The authors concluded that interventions to improve quality of life can often be generalized across cancer diagnoses. According to Husson et al. (2021) this study explored determinants of quality of life in cancer survivors and found that, after adjusting for socio-demographic and treatment variables, the specific cancer diagnosis did not significantly impact physical, psychological, or social quality of life domains. Additionally, Wang et al. (2023) a systematic review and meta-analysis found that while some cancer types may be associated with unique challenges, overall quality of life scores did not differ significantly by diagnosis when controlling for other variables, supporting the notion that diagnosis is not a primary determinant of quality of life.

Table 11. Difference in Health-related Quality of Life when Cancer Survivors are Grouped According to Highest Educational Attainment

GROUP	DOMAIN	P- VALUE	DECISION
Education	Physical Health	0.67	Not Significant
	Psychological	0.63	Not Significant
	Social Relationship	0.90	Not Significant
	Environmental Security	0.88	Not Significant

This shows the physical domain, the education among the respondents who are college graduate had the highest mean (M=63.71, SD=19.78), followed by vocational graduate (M=60.8, SD=12.82), high school graduate (M=58.09, SD=18.97), elementary graduate (M=59.5, SD= 22.13) and undergraduate (M=52, SD=14.7). Because of p> 0.05, the researchers failed to reject to null hypothesis and therefore, there is no significant difference when it comes to physical health well-being following radiation regardless of the income bracket of the respondents.

In terms psychological domain, the education among the respondents who are college graduate had the highest mean (M= 65.43, SD= 9.45), followed by high school graduate (M=61.64, SD=17.76), undergraduate (M=57.7, SD=19.54), elementary graduate (M=57.25, SD= 21.41) and vocational graduate (M=53.9, SD=13.35). Because of p> 0.05, the researchers failed to reject to null hypothesis and therefore, there is no significant difference when it comes to psychological health well-being following radiation regardless of the income bracket of the respondents.

In terms social domain, the education among the respondents who are college graduate had the highest mean (M= 60.71, SD= 14.93), followed by high school graduate (M=60.28, SD=20.38), elementary graduate (M=54.67, SD=21.41), vocational graduate (M=54.4, SD= 13.37) and undergraduate (M=54.1, SD=25.06). Because of p> 0.05, the researchers failed to reject to null hypothesis and therefore, there is no significant difference when it comes to social well-being following radiation regardless of the income bracket of the respondents.

In terms environmental domain, the education among the respondents who are college graduate had the highest mean (M= 64.57, SD= 14.82), followed by elementary graduate (M=60.5, SD=19.58), vocational graduate (M=58.3, SD=11.78), high school graduate (M=57.46, SD= 16.60) and undergraduate (M=56.2, SD=21.31). Because of p> 0.05, the researchers failed to reject to null hypothesis and therefore, there is no significant difference when it comes to environmental security following radiation regardless of the income bracket of the respondents.

This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the physical domain of health-related quality of life among cancer survivors based on their educational attainment groups (Suh et al., 2022). This study found that educational attainment was not a consistent predictor of quality of life among cancer survivors, supporting your data that show no significant differences across domains. Fang et al. (2023) This meta-analysis concluded that the impact of educational attainment on quality of life among cancer survivors is minimal when controlling for other factors such as age and comorbidities (Husson et al., 2021). In a large European cohort, this study reported that while education can influence health behaviors, it was not a significant determinant of overall quality of life in long-term cancer survivors.

Table 12. Difference in Health-related Quality of Life when Cancer Survivors are Grouped According to Monthly Income

GROUP	DOMAIN	P- VALUE	DECISION
Monthly Income	Physical Health	0.11	Not Significant
	Psychological	0.69	Not Significant
	Social Relationship	0.05	Not Significant
	Environmental Security	0.39	Not Significant

This shows the terms of the income among the respondents, those earning between 11,000-15,000 gathered the highest mean for the physical health with M=63.22, SD=12.97, followed by those earning 16,000-20,000 with scores, M =63.2, SD=10.41, with those earning 21,000-25,000 in third with scores M=60.73, SD=18.29, followed by those earning more than 25,0000 with scores of M=57.25, SD=11.29, and lastly, those who earn below 10,000 with scores of M=44.63, SD=23.03. Because p >0.05, the researchers failed to reject the null hypothesis and therefore, there is no significant difference when it comes to physical health well-being following radiation, regardless of the income bracket of the respondents.

In psychological domain, those who are earning between 21,000- 25,000 gathered the highest score with M=63.87, SD=18.14, followed by those earning more than 25,000 with scores of M=58, SD=11.90. In third comes those who are earning between 11,000- 15,000 with M=57.11, SD=11.05, followed by those earning below 10,000 in fourth with scores M=56.38, SD=20.39. Lastly, those who are earning between 16,000- 20,000 has the lowest scores, with scores M=55.2, SD=15.83. With p-value of 0.69, the researchers also failed to reject the null hypothesis, indicating that in psychological domain, there is no significant difference when it comes to psychological well-being despite the different income levels.

For social well-being, those who are earning between 21,000-25,000 gathered the highest score with M=65.87, SD=23.73, followed by those who are earning between 11,000-15,000 with M=58.33, SD=12.07, followed by those earning above 25,000 in third with scores M=57.13, SD=18.12, in fourth comes those who are earning between 16,000-20,000 with scores M=52.8, SD=10.89, and those who earns below 10,000 gathered the lowest scores of M=41.38, SD=18.83. P-value scores equate to 0.055, which still indicates failure to reject the null hypothesis.

Lastly, for environmental, those earning more than 25,000 gathered the highest scores with M=67.13, SD=18.67. It is followed by those earning between 11,000 -15,000 with scores M=62.00, SD=10.13, with those earning between 21,000- 25,000 in third with scores M=59.33, SD=21.30 followed by those earning between 16,000-20,000 in fourth with scores M=56.2, SD=10.14, and lastly those who earn below 10,000 in last with scores M=51.00, SD=18.03. With P-value scores equating to 0.39, the researchers failed to reject the hypothesis, which, just like the previous domains, shows that there is no significant difference in the environmental well-being of the respondents regardless of their income bracket. This means that with the data provided, there is not enough evidence to conclude that there are true underlying differences in the physical domain of health-related quality of life among cancer survivors based on their monthly income groups. According to Wang et al. (2023). This systematic review and meta-analysis examined the relationship between socioeconomic status—inclupding monthly income—and quality of life among cancer survivors.

The findings indicated that, after adjusting for other factors, monthly income had a limited and often non-significant impact on the main domains of quality of life, supporting your data. Similarly to Kenzik et al. (2021) that explored the influence of socio-demographic factors, including income, on quality of life in cancer survivors. The authors found that monthly income was not a significant predictor of physical, psychological, or social quality of life domains in multivariate models. Additionally, Suh et al. (2022) a cross-sectional study that investigated factors associated with quality of life among cancer survivors and found that, while income may affect some aspects of well-being, it was not a consistent or significant determinant of overall quality of life when controlling for other variables.

Table 13. Difference in Health-related Quality of Life when Cancer Survivors are Grouped According to Employment

GROUP	DOMAIN	P- VALUE	DECISION
Employment	Physical Health	0.11	Not Significant
	Psychological	0.34	Significant
	Social Relationship	0.82	Not Significant
	Environment	0.78	Not Significant

This shows the Physical Health of cancer survivors. Fifty valid cases were examined. Respondents who worked in public has the highest physical health score (M = 63.5 SD = 11.7108) followed by Government employees (M = 62.2307, SD = 13.3738) followed by self-employed (M = 61.3333, SD = 14.2861) and unemployed (M = 49.2857, SD = 21.5957). However, there is no significant difference between the Physical Health of cancer survivors after radiation therapy among their groups as determined by One-way ANOVA, F(2, 99) = 2.164666364 p = 0.105023709. The P-value of 0.105 is greater than the conventional significance level of 0.05 so we fail to reject the null hypothesis, which means that with the data provided, there is not enough evidence to say that there are true underlying differences in the physical domain of health-related quality of life in cancer survivors with the use of the four groups.

The Public sector employees had the highest scores (M =66.85, SD=10.92) on Psychological Health, followed by government employees (M=60.2, SD=10.54), self-employed (M=56, SD=21.49), and unemployed (M=47.88, SD=14.17). Results of the one-way ANOVA indicated a significant group effect on Psychological Health (p = 0.047). Because p < .05, the null hypothesis is rejected, and some degree of psychological well-being following radiation therapy does indeed vary for at least one of the groups.

In social domain scores, highest was government employees (M=61.54, SD=21.32), followed by public employees (M=59.2, SD=15.09), self-employed (M=57.13, SD=12.65), and unemployed (M=48.86, SD=23.51). The ANOVA test again showed a non-significant difference (p=0.343) amongst the groups, indicating that in the case of social relationships, the differences in occupation likely have no significant effect on the homogeneity of their experience.

For Environmental Health, government employees again had the highest score (M = 61.15, SD = 16.16), followed by self-employed (M = 60.93, SD = 14.68), public workers (M = 54.13, SD = 10.05), and unemployed individuals (M = 58.07, SD = 22.88). The one-way ANOVA result showed no significant difference among the groups (p = 0.784). The findings suggest that regardless of their employment status, environmental conditions, or experiences after radiation therapy are similar for all patients. A study by Mols et al. (2021) explored long-term quality of life among cancer survivors and found that employment status was not a significant determinant of physical, social, or environmental quality of life domains after adjusting for other variables. Similarly, Wang et al. (2023) a systematic review and meta-analysis found that, while employment may influence certain psychological outcomes, its overall effect on the main domains of quality of life in cancer survivors was limited.

Additionally, Kenzik et al. (2021). This study examined the role of socio-demographic and clinical factors, including employment status, on quality of life among cancer survivors. The authors found that while employment can be associated with certain aspects of well-being, it was not a significant predictor of overall quality of life in multivariate models, aligning with your findings.

Proposed Information Education Communication (IEC) Material for Improving Quality of Life after Radiation Therapy

Rationale

Radiation therapy is a crucial component of cancer treatment, but it often brings significant physical, emotional, and social challenges for patients. Many individuals experience a decline in their quality of life due to side effects such as fatigue, emotional distress, and limitations in daily functioning. There is a pressing need to empower patients with practical strategies to manage these challenges and enhance their overall well-being.

The study highlights that survivors often face ongoing challenges in physical, emotional, social, and role functioning, which can significantly impact their overall well-being even after treatment has ended especially in the City of San Fernando, La Union. By identifying these key domains affected by radiation therapy, the study underscores the need for targeted interventions that address not only the physical side effects but also the psychological and social aspects of recovery.

This IEC material was developed to provide clear, accessible guidance for patients and their families, focusing on key aspects of recovery: physical functioning, role functioning (both physical and mental), social functioning, and emotional well-being. By addressing these domains, the material aims to support patients in regaining independence, maintaining social connections, and fostering a positive outlook during and after radiation therapy.

Objectives

The primary objective of this IEC material is to improve the quality of life of patients undergoing or recovering from radiation therapy. Specifically, it aims to:

1. Educate patients on the importance of maintaining physical activity and provide tips for safe exercise and energy conservation.

2. Guide patients in managing their roles and responsibilities at home and work, considering both physical limitations and emotional well-being.
3. Promote emotional resilience by offering strategies for stress management, positive thinking, and seeking professional help when needed.
4. Encourage social engagement and support, helping patients stay connected with loved ones and their community.
5. Empower patients to personalize their recovery journey by adopting self-care practices and utilizing available resources.

Scheme of Implementation

The content of the Information Education Communication (IEC) Material shall revolve around the key aspects of recovery namely physical functioning, role functioning (physical and mental), social, and emotional well-being.

The implementation of this IEC material will follow a multi-step approach.

1. The researchers will distribute the Information Education Communication Material in the hospitals in City of San Fernando, La Union especially to the healthcare providers in oncology departments they will distribute the material to patients at the start of their radiation therapy and during follow-up visits.
2. Nurses and patient navigators will introduce the content during consultations, highlighting practical tips and encouraging patients to discuss any concerns related to physical, emotional, or social functioning. Educational sessions and support group meetings will incorporate the material, allowing patients to share experiences and strategies in a supportive environment.
3. Digital copies will be made available through hospital websites for easy access. Regular feedback from patients and healthcare providers will be collected to assess the material's effectiveness and identify areas for improvement.

Chapter IV

Findings, Conclusion and Recommendations

This chapter deals with the conclusions and recommendations from the study's findings and recommendations formulated in line with the findings and conclusions.

Summary of Findings

The findings of the study were summarized in accordance with the statement of the problem outlined in Chapter 1.

1. The sample consisted of a majority of females (66%), aged 40-59 years (46%). The medical diagnoses, breast cancer was the most prevalent (48%), followed by prostate (26%) and lung cancer (20%). It was evident from our first finding that the economic conditions of many of our participants were poor, with most of them either being self-employed (32%) or unemployed (26%), suggesting that financial struggles were evident. Characteristics related to income also tended to cluster towards the lower-middle class levels, as 30% estimated their income to be between Php. 21,000-25,000, while 16% stated a monthly income of below Php. 10,000. For education, again there were clusters at the lower educational levels, with most of them having completed elementary (24%) or a high school (22%) education respectively.
2. Overall, as a whole, cancer survivors in our study reported being "Satisfied" with their overall quality of life with a score of 3.51 out of 5. However, when the researchers looked at specific areas of their health and well-being, the researchers discovered moderate concerns across all the different domains: Physical Functioning: Participants indicated moderate levels of impact (mean score = 3.04) for physical functioning. Participants' reports of their physical functioning were further complicated by factors such as fatigue, difficulties with mobility, and active pain, which influenced their ability to complete daily

tasks. Psychological functioning: Mean scores suggested moderate levels of life satisfaction and psychological functioning (mean = 3.18), while still showing evidence of negative affect. Social Functioning: Overall mean of 3.11 would suggest participants represented moderate levels of satisfaction within their relationships and their support networks, while also reporting major losses surrounding sexual health. Environmental Functioning: Survivors indicated moderate levels of satisfaction in an environmental context (mean = 3.16) related to their health services, safety, and transportation.

3. Utilizing one-way ANOVA to investigate differences in HRQoL, the study found no statistically significant differences between groups defined by age, gender, diagnosis, level of education, income or employment in each of the four HRQoL domains (physical, psychological, social, environmental) as all p-values exceeded 0.05. This validates the null hypothesis, reiterating that cancer impacts HRQoL regardless of demographic dimensions.
4. Despite the lack of statistically significant differences across demographic groups, the study revealed consistent challenges related to fatigue, emotional burden, and moderate social support, suggesting these issues are common among cancer survivors after radiation therapy. Our findings show that all around support is needed for cancer survivors. This means not just medical help but also support for mental well-being, flexible work options and educational programs. This kind of help is most needed for middle-aged women and individuals from poorer backgrounds.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. This data indicates that survivors are generally working-age population. With that many women represented in the data perhaps it also indicates that women are more willing to seek treatment and follow-up care.

2. The data shows that, although differences in health-related quality of life (HRQoL) were attributed to multiple factors including age, sex, diagnosis, income, education, and employment, no difference was statistically significant; therefore overall, we could conclude that HRQoL after radiation therapy is an intertwined variable with multiple facets affecting it, and not simply due to a demographic variable or population.
3. The study also concluded that cancer survivors may have different life situations and backgrounds, but for the most part were experiencing moderate physical, emotional, social, and environmental wellbeing. This suggests that there is also a collective need for post-treatment programs and support by cancer survivors to cope with potential long-term changes as a result of therapy.
4. In conclusion, the data indicates an emphasis that recovery and survivorship experiences are different and multidimensional. It follows that it is important to personalize care plans, as well as educational interventions and supportive services to enable better quality of life outcomes in this population.

Recommendations

Based on the conclusions, the following recommendations are drawn:

1. Cancer Survivors and their Families, encourage survivors to actively engage in their long-term recovery by seeking supportive care and employing symptom management strategies. Emphasize the important role of families and caregivers, advocating for their education on providing an effective support system.
2. Lorma Colleges Radiologic Technology Department, may integrate the study's findings on common post-radiation challenges into the curriculum of Lorma Colleges for future radiologic technologists, fostering more genuine and better patient care.

3. Healthcare Administrators and Policymakers, may develop and implement comprehensive supportive care programs for cancer survivors’ post-radiation, emphasizing accessible counseling and support groups to address identified issues like general health, emotional distress, and fatigue.
4. Clinicians and healthcare providers, may utilize the study's findings to actively address post-radiation symptoms like fatigue and emotional distress. We should educate patients of the potential long-term effects and where to seek help.
5. Patient support organizations and counselors may create and disseminate resources and support networks that assist cancer survivors in managing the physical and emotional after-effects of radiation therapy, connecting them to local support with their mental, social, and practical needs.
6. Researchers may fill in any gaps in their understanding of the cancer survivors' preferred ways of coping and the need to seek support after radiation therapy. This will serve as a key to tailoring effective recovery plans.
7. Future researchers, this study might provide the foundation to compare our respondents' experiences and coping mechanisms post-radiation. They might have a deeper comprehension of their recovery as a result. Further assessment of the developed Information, Education, and Communication (IEC) material is also recommended.

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APPENDICES

APPENDICES

APPENDIX A

Letter to Adviser

LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

March 3, 2025

Mr. Eladio Don C. Camalig IV, RRT, MASE
Instructor, College of Radiologic Technology
LORMA Colleges
Carlatan, City of San Fernando, La Union

Dear Sir,

Greetings!

We, the third-year students of LORMA Colleges enrolled in the Bachelor of Science in Radiologic Technology program, are embarking on a research project titled **"Health Related Quality of Life of Cancer Survivors after Radiation Therapy"** as a requirement for our research course under the guidance of Ms. Ericquel Gem Milanes.

In this regard, we would like to sincerely request your guidance and expertise to act as our research adviser. We believe that your knowledge and perspectives will be invaluable and will significantly enhance our study.

Thank you and Mabuhay!

Respectfully yours,

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando L. Duquilla III
Researcher

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

APPENDIX B
Letter of Intent

Lorma Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

March 9, 2025
Gryn T. Salagma, RRT, MPH
Dean, College of Radiologic Technology
LORMA Colleges
City of San Fernando, La Union

Dear Ma'am,

Greetings! The undersigned 3rd-year BSRT students of LORMA Colleges, currently conducting a study titled **"Health Related Quality of Life of Cancer Survivors after Radiation Therapy."** The purpose of this study is to evaluate the health-related quality of life (HRQoL) among cancer survivors post-radiation therapy, focusing on the interplay between treatment effects, symptom severity, and overall well-being. The research study's conclusions may be shared with the radiologic technology department, cancer survivors, healthcare providers, policy makers, and support organizations to help them gain insights into how radiation therapy affects their quality of life.

For this, we would like to seek permission for our current research paper to be submitted for ethical review by the Research Ethics Committee of LORMA Colleges.

We appreciate your consideration and genuinely hope you will be able to grant our request.

Respectfully yours,

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando L. Duquilla III
Researcher

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE
Research Adviser

APPENDIX C
Letter to the Chairman of Research Ethics Committee

Lorma Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

March 9, 2025

Ryan Jay G. Mostoles, RMT, MASE
Chairman, Research Ethics Committee
Lorma Colleges
City of San Fernando, La Union

Dear Sir,

Greetings! The undersigned are third-year students of LORMA Colleges studying for a Bachelor of Science in Radiologic Technology and are currently enrolled in Research 2. One requirement for this course is to conduct a research study.

Our group would like to request permission for our ongoing research paper titled **"Health Related Quality of Life of Cancer Survivors after Radiation Therapy"** to be subjected to an ethical review by the Research Ethics Committee of LORMA Colleges. The result of this study will provide a foundation for the improvement of the performance evaluation tool utilized by the College of Radiologic Technology at Lorma Colleges.

We appreciate your consideration and genuinely hope you will be able to grant our request.

Respectfully Yours,

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando L. Duquilla III
Researcher

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE
Research Adviser

APPENDIX D
Letter to Validators

LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

March, 17, 2025

JUAN CARLO BENTINGANAN, RRT
Radiation Therapist, Jose R. Reyes Memorial Medical Center
Santa Cruz, Manila

Dear Sir,

Greetings!

We, NIEVERAS, ZILIAN E., DUQUILLA, ROLANDO III L., INIGO, DEISIREY DIANE G., BARTOLOME, FRANCES LOUISE D., ACQUIATAN, ALTHEA B., CATBAGAN, CHRISTIAN PAUL Q. will be undertaking a study entitled "HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY". It aims to determine the life of cancer survivors after undergoing radiation therapy.

With your expertise, we sincerely ask for your assistance in validating our questionnaires.

We are looking forward to a positive response to this matter. Thank you very much and God bless.

Sincerely yours,

The Researchers

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando L. Duquilla III
Researcher

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE
Research Adviser

LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

March 17, 2025

MICHAEL JOHN FLORES, RRT, RSO, MSRT
CATHLAB Staff, Lorma Medical Center
City of San Fernando, La Union

Dear Sir,

Greetings!

We, NIEVERAS, ZILIAN E., DUQUILLA, ROLANDO III L., INIGO, DEISIREY DIANE G., BARTOLOME, FRANCES LOUISE D., ACQUIATAN, ALTHEA B., CATBAGAN, CHRISTIAN PAUL Q. will be undertaking a study entitled "HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY". It aims to determine the life of cancer survivors after undergoing radiation therapy.

With your expertise, we sincerely ask for your assistance in validating our questionnaires.

We are looking forward to a positive response to this matter. Thank you very much and God bless.

Sincerely yours,

The Researchers

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando L. Duquilla III
Researcher

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE
Research Adviser

LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

March 17, 2025

ERNESTO CATUNGAL III, RRT
Chief Technologist, Cancer Institute

Dear Sir,

Greetings!

We, NIEVERAS, ZILIAN E., DUQUILLA, ROLANDO III L., INIGO, DEISIREY DIANE G., BARTOLOME, FRANCES LOUISE D., ACQUIATAN, ALTHEA B., CATBAGAN, CHRISTIAN PAUL Q. will be undertaking a study entitled "HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY". It aims to determine the life of cancer survivors after undergoing radiation therapy.

With your expertise, we sincerely ask for your assistance in validating our questionnaires.

We are looking forward to a positive response to this matter. Thank you very much and God bless.

Sincerely yours,

The Researchers

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando

Rolando L. Duquilla III
Researcher

Iginigo

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE
Research Adviser

APPENDIX E
Letter for the Respondents
LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

Dear Respondent,

Greetings with a Lorma Smile!

The students of BSRT—III are conducting research entitled **"Health Related Quality of Life of Cancer Survivors after Radiation Therapy"** with the primary goal of to evaluate the health-related quality of life (HRQoL) among cancer survivors post-radiation therapy, focusing on the interplay between treatment effects, symptom severity, and overall well-being at City of San Fernando, La Union.

In this regards, we humbly request you to be one of our study participants. We sincerely hope you can assist us by answering the questionnaire honestly and accurately. All information shared will be handled with strict confidentiality and utilized solely for academic purposes by the researchers in compliance with the Data Privacy Act of 2012.

Your affirmative response to this request would be greatly valued. Thank you for your cooperation.

Respectfully Yours,

Althea B. Acquiatan
Researcher

Frances Louise D. Bartolome
Researcher

Christian Paul Q. Catbagan
Researcher

Rolando L. Duquilla III
Researcher

Deisirey Diane G. Inigo
Researcher

Zilian E. Nieveras
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE
Research Adviser

APPENDIX F
Approval Sheet from the Research Ethics Committee
LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

LC-REC Form 8034
APPROVAL LETTER

REC Reference #: 2025-122

April 25, 2025

To: ZILIAN NIEVERAS, ROLANDO DUQUILLA III, FRANCES LOUISE BARTOLOME, DEISIREY DIANE INIGO, ALTHEA ACQUIATAN
and CHRISTIAN PAUL CATBAGAN
LORMA Colleges, College of Radiologic Technology

Subject: Approval of the Research Study "HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY" by the Research Ethics Committee (REC).

Dear Researchers,

The Research Ethics Committee (REC) has reviewed your application to conduct the above-mentioned research study in the LOCALE OF STUDY with you as the Principal Investigators within the duration of April 25, 2025 to April 25, 2026.

The Following documents have been reviewed and approved:

1. Letter of Intent to Conduct the Study
2. Endorsement of the Research Technical Panel
3. Title and Statement of the Problem/ Objective
4. Literature Review
5. Methods and Procedures
6. Population and Locale
7. Exclusion/Inclusion Criteria
8. Data Analysis
9. Ethical Considerations

We approved the study to be conducted in the presented form provided that ***"state the informed consent form as if the researchers are directly communicating with the respondents"*** will be integrated into the final research protocol.

None of the Investigators participating in this study took part in the decision making and voting procedure for this study.

The Institutional REC expects to be informed about the progress of the study, any revision in the protocol before implementation and participants'/respondents' information/informed consent. Likewise, you are required to provide the Board a copy of the final report.

Yours Sincerely,

RYAN JAY B. MOSTOLES, MASE, RMT
Interim Chairman, Lorma Colleges-Research Ethics Committee

APPENDIX G
Questionnaire
LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

PART 1. Demographic Profile
Instructions:
Please answer all questions by putting a check the answers that best applies to you.

1.1 Age:
- ○ 18-39 years
- ○ 40-59 years
- ○ 60-90 years

1.2 Sex: ○ Male ○ Female

1.3 Diagnosis:
- ○ Breast Cancer
- ○ Lung Cancer
- ○ Colon Cancer
- ○ Prostate Cancer

Others (*Please specify*):___________________

1.4 Socioeconomic status:

Monthly Income
- ○ Below Php 10,000
- ○ Between Php 11,000- 15,000
- ○ Between Php 16,000- 20,000
- ○ Between Php 21,000- 25,000
- ○ More than Php 25,000

Highest Educational Attainment
- ○ Elementary Graduate
- ○ High School Graduate
- ○ Vocational Graduate
- ○ Undergraduate
- ○ College Graduate

Employment
- ○ Government
- ○ Public
- ○ None

Others (*Please specify*):____________________

Questionnaire

LORMA Colleges
Carlatan, City of San Fernando, La Union
College of Radiologic Technology

Categorized Copy of Questionnaire based on their Domains

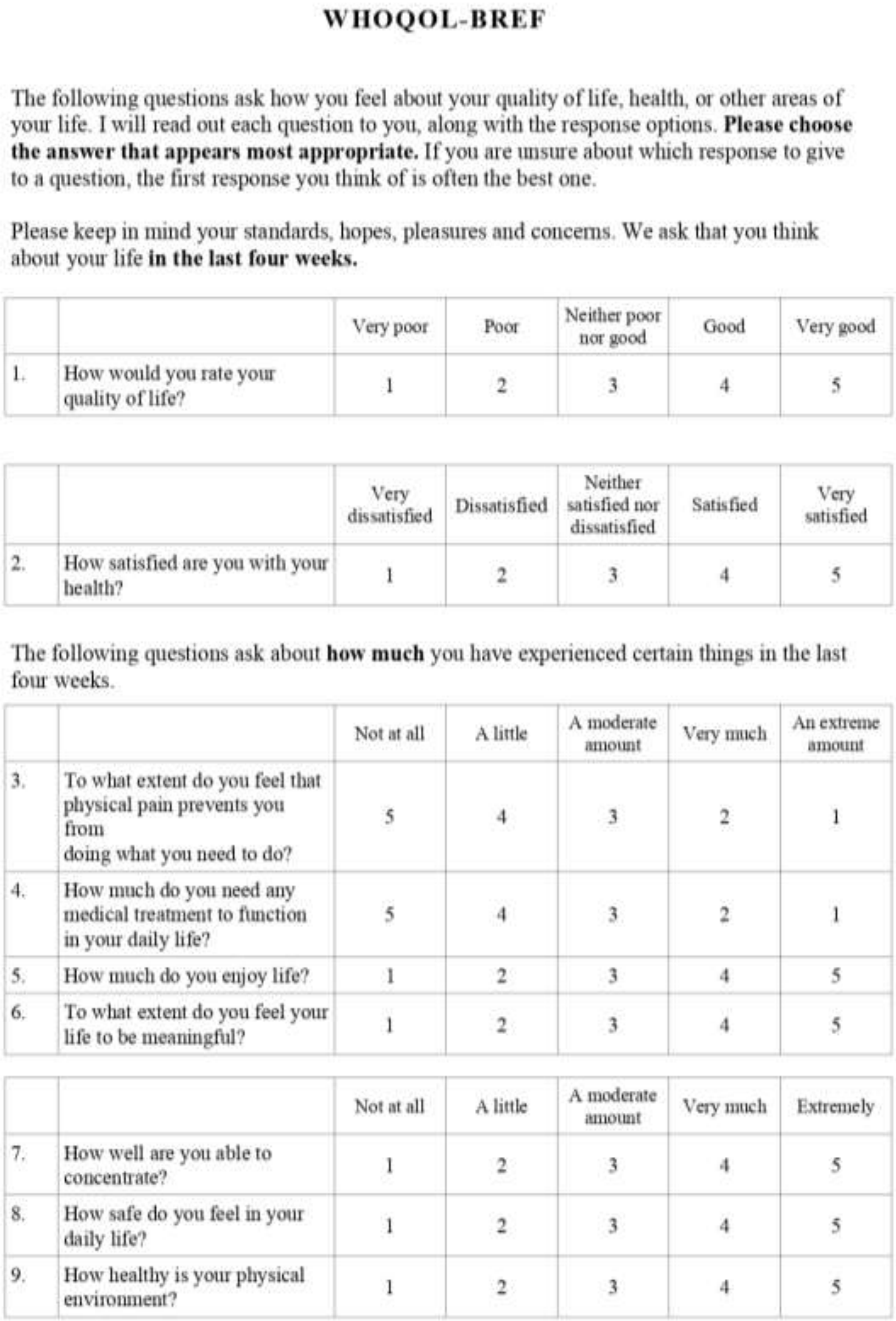
General Instruction: The following questions ask how you feel about your quality of life, health, or other areas of your life. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one.

I. General Health					
Indicators	**5** (Very Good)	**4** (Good)	**3** (Neither poor or Good)	**2** (Poor)	**1** (Very poor)
1. How would you rate your quality of life?					
	5 (Very Satisfied)	**4** (Satisfied)	**3** (Neither satisfied nor dissatisfied)	**2** (Dissatisfied)	**1** (Very dissatisfied)
2. How satisfied are you with your health?					
II. Physical Health					
Indicators	**5** (An extreme amount)	**4** (Very much)	**3** (A moderate amount)	**2** (A little)	**1** (Not at all)
1. To what extent do you feel that physical pain prevents you from doing what you need to do?					
2. How much do you need any medical treatment to function in your daily life?					
	5 (Completely)	**4** (Mostly)	**3** (Moderately)	**2** (A little)	**1** (Not at all)
3. Do you have enough energy for everyday life?					
	5 (Very good)	**4** (Good)	**3** (Neither poor nor good)	**4** (Poor)	**5** (Very poor)
4. How well are you able to get around?					

	5 (Very Satisfied)	**4** (Satisfied)	**3** (Neither satisfied nor dissatisfied)	**2** (Dissatisfied)	**1** (Very dissatisfied)
5. How satisfied are you with your sleep?					
6. How satisfied are you with your ability to perform your daily living activities?					
7. How satisfied are you with your capacity for work?					
III. Psychological Health					
Indicators	**5** (An extreme amount)	**4** (Very much)	**3** (A moderate amount)	**2** (A little)	**1** (Not at all)
1. How much do you enjoy life?					
2. To what extent do you feel your life to be meaningful?					
	5 (Extremely)	**4** (Very much)	**3** (A moderate amount)	**2** (A little)	**1** (Not at all)
3. How well are you able to concentrate?					
	5 (Completely)	**4** (Mostly)	**3** (Moderately)	**2** (A little)	**1** (Not at all)
4. Are you able to accept your bodily appearance?					
	5 (Very Satisfied)	**4** (Satisfied)	**3** (Neither satisfied nor dissatisfied)	**2** (Dissatisfied)	**1** (Very dissatisfied)
5. How satisfied are you with yourself?					
	5 (Never)	**4** (Seldom)	**3** (Quite Often)	**2** (Very Often)	**1** (Always)
6. How often do you have negative feelings such as blue mood, despair, anxiety, depression?					
IV. Social Relationships					
Indicators	**5** (Very Satisfied)	**4** (Satisfied)	**3** (Neither satisfied nor dissatisfied)	**2** (Dissatisfied)	**1** (Very dissatisfied)
1. How satisfied are you with your personal relationships?					

2. How satisfied are you with your sex life?					
3. How satisfied are you with the support you get from your friends?					
V. Environmental Security					
Indicators	**5** (Extremely)	**4** (Very much)	**3** (A moderate amount)	**2** (A little)	**1** (Not at all)
8. How safe do you feel in your daily life?					
	5 (Completely)	**4** (Mostly)	**3** (Moderately)	**2** (A little)	**1** (Not at all)
9. Have you enough money to meet your needs?					
10. How well are you able to concentrate?					
11. To what extent do you have the opportunity for leisure activities?					
	5 (Very Satisfied)	**4** (Satisfied)	**3** (Neither satisfied nor dissatisfied)	**2** (Dissatisfied)	**1** (Very dissatisfied)
12. How satisfied are you with the conditions of your living place?					
13. How satisfied are you with your access to health services?					
14. How satisfied are you with your transport?					

Original Copy of the Questionnaire



WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

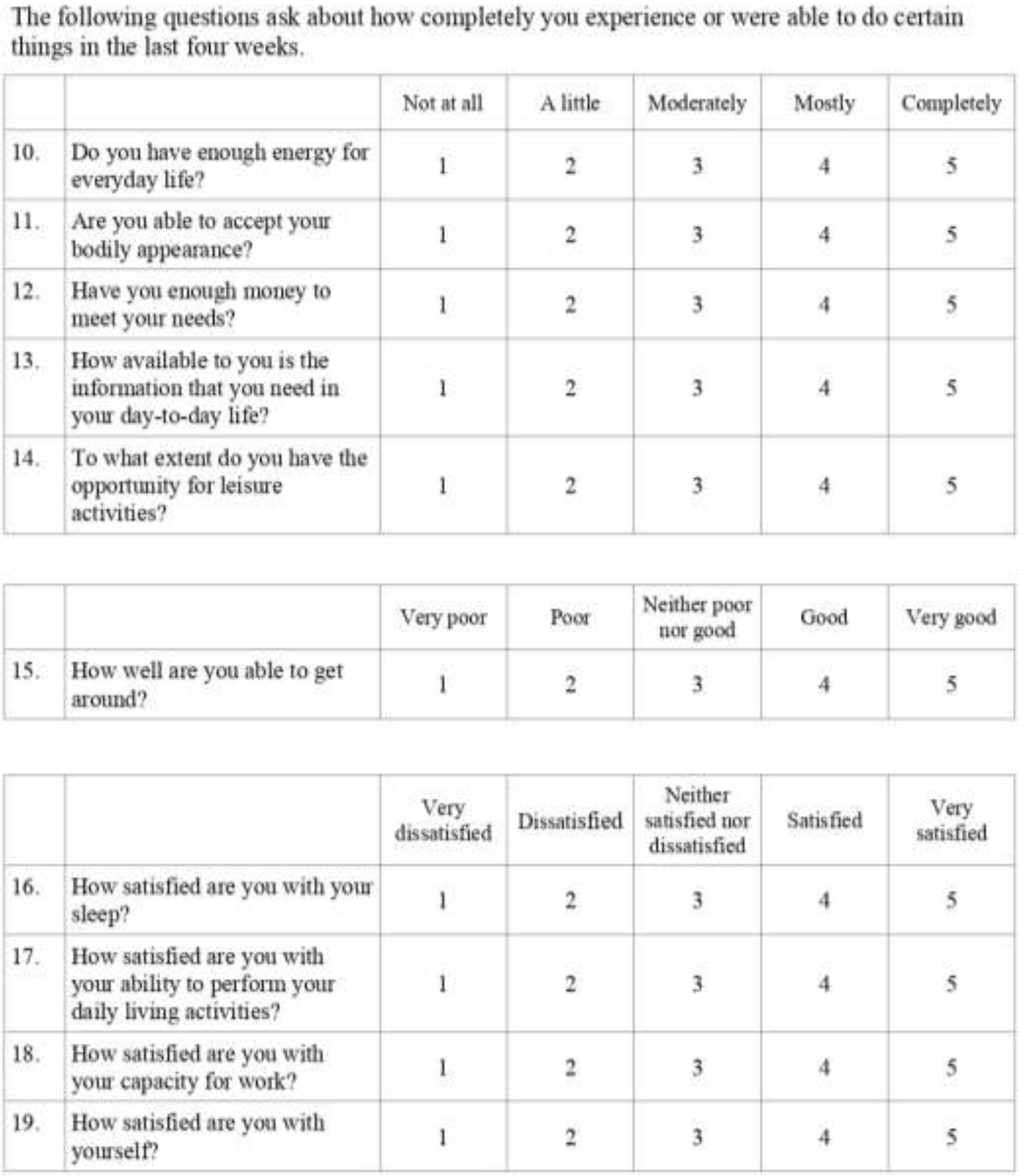
		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5



The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 ☐ + ☐ + ☐	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:

* See Procedures Manual, pages 13-15

APPENDIX H
Validity of Questionnaire

Name: ERNESTO GATUNGAL III

Designation: CHIEF TECH RT
LORMA CANCER INSTITUTE

Directions: Please rate the validity of the data gathering instrument by using the scale below. Check (✓) the number that corresponds to your rating.

5 - Very Highly Valid
4 - Highly Valid
1 - Not Valid
3 - Moderately Valid
2 - Fairly Valid

I. Content Validity		RATING				
		5	4	3	2	1
1	The data gathering instrument is comprehensive. It covers all areas that are important in the study.			✓		
2	The instrument is well organized and stated with clarity	✓				
3	The instrument does not offend the sensibilities of the respondents/participants					✓
4	The items are objective i.e. the responses to be elicited are neither biased nor reactive			✓		
5	The items are formulated in accordance to the explicit/ implicit objectives of the study.			✓		
II. Face Validity						
1	The data gathering instrument is neatly and clearly printed.	✓				
2	Proper font size and spacing of text are observed which enable the respondent to understand every word	✓				
3	Sentences are grammatically correct.	✓				
4	The directions given are clear in all sections of the data gathering instrument	✓				
5	Language used is appropriate in terms of its vocabulary and technicality		✓			

LORMA COLLEGES

APPENDIX H
Validity of Questionnaire

Name: Michael John F. Flores RRT, MSRT

Designation: Radiology / Cathlab Staff

Directions: Please rate the validity of the data gathering instrument by using the scale below. Check (✓) the number that corresponds to your rating.

5 - Very Highly Valid
4 - Highly Valid
3 - Moderately Valid
2 - Fairly Valid
1 - Not Valid

I. Content Validity		RATING				
		5	4	3	2	1
1	The data gathering instrument is comprehensive. It covers all areas that are important in the study.		✓			
2	The instrument is well organized and stated with clarity		✓			
3	The instrument does not offend the sensibilities of the respondents/participants		✓			
4	The items are objective i.e. the responses to be elicited are neither biased nor reactive		✓			
5	The items are formulated in accordance to the explicit/ implicit objectives of the study.		✓			
II. Face Validity						
1	The data gathering instrument is neatly and clearly printed.		✓			
2	Proper font size and spacing of text are observed which enable the respondent to understand every word		✓			
3	Sentences are grammatically correct.		✓			
4	The directions given are clear in all sections of the data gathering instrument				✓	
5	Language used is appropriate in terms of its vocabulary and technicality				✓	

Suggestions: • Arrange the questionnaire / questions according to their instructions

› Translate the questionnaire in native language (Tagalog / Ilocano)

LORMA
COLLEGES

APPENDIX H
Validity of Questionnaire

Name: Juan Carlo C. Bontingahan RRT Designation: RADIATION THERAPIST

Directions: Please rate the validity of the data gathering instrument by using the scale below. Check (✓) the number that corresponds to your rating.

5 - Very Highly Valid
3 - Moderately Valid
4 - Highly Valid
2 - Fairly Valid
1 - Not Valid

I. Content Validity		RATING				
		5	4	3	2	1
1	The data gathering instrument is comprehensive. It covers all areas that are important in the study.		✓			
2	The instrument is well organized and stated with clarity			✓		
3	The instrument does not offend the sensibilities of the respondents/participants	✓				
4	The items are objective i.e. the responses to be elicited are neither biased nor reactive		✓			
5	The items are formulated in accordance to the explicit/ implicit objectives of the study.		✓			
II. Face Validity						
1	The data gathering instrument is neatly and clearly printed.			✓		
2	Proper font size and spacing of text are observed which enable the respondent to understand every word			✓		
3	Sentences are grammatically correct.					
4	The directions given are clear in all sections of the data gathering instrument		✓			
5	Language used is appropriate in terms of its vocabulary and technicality			✓		

APPENDIX I

LORMA
COLLEGES

LC-REC Form #010
APPLICATION FOR REVIEW FORM

APPLICATION FOR REVIEW

(Adapted from National Ethics Guidelines for Health and Health-Related Research 2017)

INSTRUCTION: Please accomplish the form and ensure that all necessary documents are included in your submission.

I. GENERAL INFORMATION:

Title of the Study: **HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY**

REC Code : 2025- 122 No. of Study Participants: 50

Study Site :**CITY OF SAN FERNANDO, LA UNION**

Name of Researcher/s: **CATBAGAN, Christian Paul Q. , DUQUILLA, Rolando III L., NIEVERAS, Zilian E., ACQUIATAN, Althea B., BARTOLOME, Frances Louise D., INIGO, Deisirey Diane G.**

Contact Information : Telephone Number: _________Mobile Number: 09602878278

Fax Number: N/A Email : rolandoiii.duquilla@lorma.edu

Name of Institution: **Lorma Colleges Inc.**

Institution's Address : Carlatan, City Of San Fernando, La Union

Type of Study:

☐ Sponsored Clinical Trial
☐ Researcher-Initiated Clinical Trials
☐ Health Operations Research
☐ Social or Behavioral Research
☑ Public Health or Epidemiologic
☐ Biomedical Research
☐ Stem Cell Research
☐ Genetic Research
☐ Others: ________________________

Source of Funding : ☑ Self-Funded
☐ Scholarship/Research Grant
☐ Government-Funded
☐ Institution-Funded
☐ Sponsored by Pharmaceutical Company
☐ Others: ____

Duration of the Study: Start Date: September 2024 End Date: May 2025

Has the Research Undergone Technical Review? ☐ Yes ☐ No

(Please attach Technical Review Result)

Has the Research been Submitted to Another Research Ethics Committee? ☐ Yes ☐ No

II. BRIEF DESCRIPTION OF THE STUDY (Use Extra Sheet if Necessary)

The study examines the health-related quality of life (HRQoL) among cancer survivors who have undergone radiation therapy. It explores how treatment-related side effects impact their physical, emotional, and social well-being. The research utilizes the RAND Health Care questionnaire to assess various aspects of survivors' quality of life, such as fatigue, pain, and emotional distress. By analyzing demographic factors, treatment regimens, and symptom severity, the study aims to identify key determinants affecting survivors' well-being. The findings will contribute to the development of information, education, and campaign (IEC) materials to improve post-treatment support for cancer survivors

III. CHECKLIST OF DOCUMENTS FOR SUBMISSION

a. Basic Requirements
   - ☐ Letter of Intent to Conduct a Study
   - ☐ Filled-up Application Form for Review
   - ☐ Endorsement of the RTP
   - ☐ Timetable
   - ☐ Curriculum Vitae of Researcher
   - ☐ Full Proposal/Study Protocol
   - ☐ Budget
   - ☐ Funding Institution

b. Supplementary Documents (if applicable)
   - ☐ Questionnaire
   - ☐ Data Collection Forms
   - ☐ Product Brochure
   - ☐ Philippine FDA Marketing Authorization or Import Licensure
   - ☐ Permit/s for Special Population
   - ☐ Others: ____

Accomplished by: **CATBAGAN, Christian Paul Q.** Date Submitted: ____________________

Rolando
DUQUILLA, Rolando III L.

NIEVERAS, Zilian E.

ACQUIATAN, Althea B.

BARTOLOME, Frances Louise D.

INIGO, Deisirey Diane G.

- -

(to be filled-out by the Secretariat)

Completeness of Documents: ☐ Complete ☐ Incomplete

Remarks:

____

____

____

Date Received: ______________________ Received by: ______________________________

APPENDIX J

LORMA
COLLEGES

LC-REC Form #011

INFORMED CONSENT FORM

INFORMED CONSENT FORM

INSTRUCTION: Please accomplish the form and ensure that all necessary documents are included in your submission.

GENERAL INFORMATION:

Title of the Study: **HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY**

REC Code : 2025- 122 No. of Study Participants: 6

Study Site : City Of San Fernando, La Union

Name of Researcher/s: **CATBAGAN, Christian Paul , DUQUILLA III, Rolando, NIEVERAS, Zilian, ACQUIATAN, Althea, BARTOLOME, Frances Louise, INIGO, Deisirey Diane**

Contact Information : Telephone Number: __________Mobile Number: 09602878278

Fax Number: N/A Email : rolandoiii.duquilla@lorma.edu

Name of Institution: **Lorma Colleges Inc.**

Institution's Address : **Carlatan, City Of San Fernando, La Union**

Type of Study:
☐ Sponsored Clinical Trial
☐ Researcher-Initiated Clinical Trials
☐ Health Operations Research
☐ Social or Behavioral Research
☑ Public Health or Epidemiologic
☐ Biomedical Research
☐ Stem Cell Research
☐ Genetic Research
☐ Others:_______________

Source of Funding :
☑ Self-Funded
☐ Scholarship/Research Grant
☐ Government-Funded
☐ Institution-Funded
☐ Sponsored by Pharmaceutical Company
☐ Others: ____

Duration of the Study:Start Date: SEPTEMBER 2024 End Date: MAY 2025

INTRODUCTION (Use Extra Sheet if Necessary)

We, the students of College of Radiologic Technology, are currently conducting a research entitled "Quality of life of cancer survivors after radiation therapy"

PURPOSE OF RESEARCH (Use Extra Sheet if Necessary)

This research study was conducted with a sole purpose to evaluate the health-related quality of life (HRQoL) among cancer survivors post-radiation therapy, focusing on the interplay between treatment effects, symptom severity, and overall well-being. The research study's conclusions may be shared with the radiologic technology department, cancer survivors, healthcare providers, policy makers, and support organizations to help them gain insights into how radiation therapy affects their quality of life.

TYPE OF RESEARCH INTERVENTION (Use Extra Sheet if Necessary)

1. Participant Selection

The participants are cancer survivors after radiation therapy.

2. Voluntary Participation

Any participation you have in this research is completely voluntary. You solely decide whether or not to participate. You are free to let us know what you have decided. You are allowed to withdraw and stop participating at any moment if you change your mind.

3. Procedures

Survey questionnaires will be utilized by the researchers to ascertain the quality of life of cancer survivors after radiation therapy. The researchers will use questionnaires since they allow the systematic collection of data from a large number of participants and provide insights into the physical, emotional, and social well- being of respondents.

4. Risks

This research study will not involve any risk whether it's psychological, emotional and mental because the researchers assured that the topic will not be controversial that may violate and invalidate the feelings and perspective of their respondents.

5. Benefits

This study aims to inform cancer survivors, healthcare providers, policy makers, support organizations, and the Lorma Radiologic Technology department about the impact of radiation therapy on cancer survivors' quality of life. It will help healthcare providers improve care strategies, inform policy decisions, enhance support services, and guide cancer survivors in their post-treatment journey. The Lorma Radiologic Technology department will benefit by gaining insights into the long-term effects of radiation therapy, enabling them to provide better patient education and support.

6. Reimbursements

Ma'am / Sir, there will be no reimbursements in this study.

7. Confidentiality

Rest assured that all information obtained will be kept confidential and will not be shared with anybody outside the study team. All the information you provide will be accessible only to the researchers and all participants will remain anonymous.

8. Sharing of Results

Rest assured that all information obtained will be kept confidential and will not be shared with anybody outside the study team. All the information you provide will be accessible only to the researchers and all participants will remain anonymous.

9. Right to Refuse or Withdrawal

You have the right to decline and withdraw if answering the questions makes you uncomfortable, Ma'am/Sir.

10. Who to Contact

Participants can get in touch with Rolando L. Duquilla III if they need a response immediately. They can reach him via phone at 09602878278 or by email at rolandoiii.duquilla@lorma.edu.

CERTIFICATE OF CONSENT:

I have read the information stated herein or it was properly explained to me. I was provided with a chance to ask questions relative to it. All questions I asked were answered properly; therefore, I consent and voluntarily participate in this study.

Name of Participant: ____
Signature of Participant: _____________________________________
Date: ____

Statement from the Researcher/Person Obtaining the Consent

All information pertaining to this study was explained to the possible participant and made sure that he/she fully understood what she/he has to do in the research. Similarly, I affirm that the potential participant was given with a chance to ask questions which I have answered accurately to the best of my ability. Likewise, I affirm that the participant was not coerced or forced in giving consent. That he/she has voluntarily provided the consent.

Accomplished by: **CATBAGAN, Christian Paul Q.** Date Submitted: ______________

DUQUILLA, Rolando III L.

NIEVERAS, Zilian E.

ACQUIATAN, Althea B.

BARTOLOME, Frances Louise D.

INIGO, Deisirey Diane
(Signature over Printed Name)

APPENDIX K

LC-REC Form #012
SUBMISSION CHECKLIST

LORMA
COLLEGES

SUBMISSION CHECKLIST

Name of Researcher/s: **CATBAGAN, Christian Paul Q. , DUQUILLA, Rolando III L., NIEVERAS, Zilian E., ACQUIATAN, Althea B., BARTOLOME, Frances Louise D., INIGO, Deisirey Diane G.**

Title of Study: ***HEALTH RELATED QUALITY OF LIFE OF CANCER SURVIVORS AFTER RADIATION THERAPY***

Name of Sponsor: N/A

Date of Submission : MARCH 7, 2025 Contact No.: 09602878278,

Documents	Complete	Incomplete	Remarks
1. Letter of intent to conduct the study			
2. Filled-up Application for Review Form			
3. Endorsement of the Research Technical Panel (attach the Compliance Report)			
4. Title, Statement of the Problem/Objective			
5. Significance of the Study			
6. Literature Review			
7. Methods and Procedures			
8. Population and Locale			
9. Exclusion/Inclusion Criteria			
10. Data Analysis			
11. Questionnaire			
12. Funding Institution			
13. Timetable			
14. Ethical Considerations			
15. Curriculum Vitae of the Researcher/s			

by: **CATBAGAN, Christian Paul Q.**
(Signature over Printed Name)

DUQUILLA, Rolando III L.

(Signature over Printed Name)

NIEVERAS, Zilian E.

(Signature over Printed Name)

ACQUIATAN, Althea B.

(Signature over Printed Name)

BARTOLOME, Frances Louise D.

(Signature over Printed Name)

Inigo

INIGO, Deisirey Diane G.

(Signature over Printed Name)

Date: ______________________________

APPENDIX L

LORMA
COLLEGES

Budgetary Requirements

ITEM	DETAILS	ESTIMATED COST (Php)
School Supplies	Folders, binder clip	380
Printing cost	Printing	1,820
Transportation	Travel to ITRMC and BETHANY for submission of letter	200
	Travel to ITRMC and BETHANY for conducting questionnaire	240
Title Defense Fee	-	3,785
Final Defense Fee	-	6,140
REC Fee	-	1,000
	TOTAL:	**13,655**

APPENDIX M

LORMA
COLLEGES

Timetable

2024	
DATE	**ACTIVITY**
August 21	Groupings
August 31	Topic/Title Formulation
September 9-15	Working title was given
September 9-15	Letter to the Adviser was given
September 9-15	Consultation for Research Adviser
September 16	Finalize tentative/title
September 17- October 5	Chapter 1 formulation
October 9-11	Accomplishment of Chapter 1
October 18- November 8	Chapter 2 formulation
November 19- November 8	Formulation of questionnaires
November 8	Submission of Chapter 1 & 2
November 11-24	Revision of Chapter 1 & 2
November 25	Submission of the final paper of chapter 1 & 2
December 3	Research Class Presentation
December 19	Research Proposal Defense
December 21-30	Revision of manuscript

2025	
DATE	**ACTIVITY**
January 6	Submission of revised manuscript
January 15-16	Consultation with research instructor
February 12	Submission of progress report

February 18	Panel consultation
March 3-5	Revision of manuscript
March 6	REC forms completion
March 6-11	Submission of revised manuscript
March 11	Research consultation
March 11-16	Revision of the manuscript
March	Approval from Research Technical Panels
April 8	Submission of Research Proposal to the Research Ethics Committee
April 25	Approval from the Research Ethics Committee
April 21- May 12	Data Gathering
May 10-12	Data Analysis
May 11-14	Chapter 3 formulation
May 11-14	Chapter 4 formulation
May 16	Final Defense
May 23-26	Final manuscript revision
May 31	Research Forum
	Paper publication and presentation

DOCUMENTATION


CENTRO
12

CURRICULUM VITAE

LC-REC Form #003

CV TEMPLATE

CURRICULUM VITAE

CATBAGAN, CHRISTIAN PAUL Q.

I. PERSONAL INFORMATION

Address : Lubing, San Juan, La Union
Contact No. : 09673163948
Email add :christianpaul.catbagan@lorma.edu
Date of Birth : May 06, 2002
Place of Birth : Lubing, San Juan, La Union

II. EDUCATIONAL BACKGROUND

Tertiary **2020-Present**

Bachelor of Science in Radiologic Technology
Lorma Colleges
Carlatan, City of San Fernando, La Union

Secondary **2018-2020**

Senior High School
Science, Technology, Engineering, and Mathematics
Saint John Bosco College
Lingsat, City of San Fernando

2014-2018

Junior High School
San Juan National High School
Ili Sur, San Juan, La Union

Primary **2009-2014**
Lubing Elementary School
Lubing, San Juan, La Union

III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

Grade 4 – 6	With Honors
Grade 9 – 12	With Honors

IV. WORK EXPERIENCE:

N/A

V. ELIGIBILITY

N/A

VI. SEMINARS ATTENDED

N/A

VII. INVOLVEMENT IN RESEARCH/RESEARCHES CONDUCTED

N/A

LC-REC Form #003

CV TEMPLATE

LORMA
COLLEGES

CURRICULUM VITAE

DUQUILLA, ROLANDO III L.

I. PERSONAL INFORMATION

Address : Carlatan, San Fernando La Union
Contact No. : 09602878278
Email add : rolandoiii.duquilla@lorma.edu
Date of Birth : August 16, 2001
Place of Birth : Carlatan, City of San Fernando, La Union

II. EDUCATIONAL BACKGROUND

Tertiary **2022-Present**

Bachelor of Science in Radiologic Technology
Lorma Colleges
Carlatan, City of San Fernando, La Union

Secondary **2018-2020**

Senior High School
Science, Technology, Engineering, and Mathematics
Saint Louis College
Carlatan, City of San Fernando

2014-2018

Junior High School
Saint Louis College

Carlatan, City of San Fernando

Primary **2008-2014**

Lingsat Integrated School
Lingsat, San Fernando, La Union

III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

N/A

IV. WORK EXPERIENCE:

N/A

V. ELIGIBILITY

N/A

VI. SEMINARS ATTENDED

N/A

VII. INVOLVEMENT IN RESEARCH/RESEARCHES CONDUCTED

Cigarette Butts And Corn Husks As An Alternative Material In Eco Bag (2020)

Disaster Risk Preparedness Practices On Flood In Zone 7 Of Barangay Lingsat (2019)

LORMA COLLEGES

LC-REC Form #003

CV TEMPLATE

CURRICULUM VITAE

NIEVERAS, ZILIAN E.

I. PERSONAL INFORMATION

Address : Nalvo Norte, Luna, La Union
Contact No. : 09457457251
Email add :zilian.nieveras@lorma.edu
Date of Birth : November 30, 2003
Place of Birth : Bacnotan, La Union

II. EDUCATIONAL BACKGROUND

Tertiary **2022-Present**

Bachelor of Science in Radiologic Technology
Lorma Colleges
Carlatan, City of San Fernando, La Union

Secondary **2018-2020**

Senior High School
Science, Technology, Engineering, and Mathematics
Luna National High School
Barrientos, Luna, La Union

2014-2018

Junior High School
Luna National High School

Barrientos, Luna, La Union

Primary **2008-2014**

Nalvo Norte Elementary School
Nalvo Norte, Luna, La Union

III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

Dean's Lister, Second Semester (2022-2023)
With Honors, Senior High School (2021-2022)
With Honors, Senior High School (2020-2021)
With Honors, Junior High School (2019-2020)

IV. WORK EXPERIENCE:

N/A

V. ELIGIBILITY

N/A

VI. SEMINARS ATTENDED

N/A

VII. INVOLVEMENT IN RESEARCH/RESEARCHES CONDUCTED

Qualitative Research (2020-2021)
Awareness in organic farming among selected local farmers in Nalvo Norte and Sur, Luna,La Union

Experimental Research (2021-2022)
Aragan Seaweed Leaves (Sargassum Cintum) And Cow Manure As Black Behi White Stem Pechay (Brassica Rapa) Growth And Yield Enhancer

LC-REC Form #003

CV TEMPLATE

CURRICULUM VITAE

ACQUIATAN, ALTHEA B.

I. PERSONAL INFORMATION

Address : San Eugenio, Aringay, La Union
Contact No. : 09544727347
Email add : althea.acquiatan@lorma.edu
Date of Birth : October 11, 2003
Place of Birth : San Fernando, La Union

II. EDUCATIONAL BACKGROUND

Tertiary **2022-Present**

Bachelor of Science in Radiologic Technology
Lorma Colleges
Carlatan, City of San Fernando, La Union

Secondary **2019-2021**

Senior High School
Science, Technology, Engineering, and Mathematics
Saint Mary’s Academy
Agoo, La Union

2015-2019

Junior High School
Saint Mary’s Academy
Agoo, La Union

Primary **2009-2015**

Saint Barachel Special Science School
Aringay La Union

III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

N/A

IV. WORK EXPERIENCE:

RHU (VOLUNTEER) – Aringay, La Union

V. ELIGIBILITY

N/A

VI. SEMINARS ATTENDED

N/A

VII. INVOLVEMENT IN RESEARCH/RESEARCHES CONDUCTED

N/A

LC-REC Form #003

CV TEMPLATE

CURRICULUM VITAE

BARTOLOME, FRANCES LOUISE D.

I. PERSONAL INFORMATION

Address : Suso, Sta. Maria Ilocos Sur
Contact No. : 09065289913
Email add : franceslouise.bartolome@lorma.edu
Date of Birth : September 4, 2004
Place of Birth : Tamag, Vigan

II. EDUCATIONAL BACKGROUND

Tertiary **2023 - Present**

Bachelor of Science in Radiologic Technology
Lorma Colleges
Carlatan, City of San Fernando, La Union

Secondary **2020 - 2022**

Senior High School
Science, Technology, Engineering, and Mathematics
ISPSC Laboratory High School
Poblacion Sur, Sta. Maria, Ilocos Sur

2016 - 2020

Junior High School
ISPSC Laboratory High School
Poblacion Sur, Sta. Maria, Ilocos Sur

Primary **2010-2016**

Suso, Sta. Maria Elementary School

III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

S.Y 2020-2021	With Honors
S.Y 2021-202.	With Honors
S.Y 2018-2019.	With Honors

IV. WORK EXPERIENCE:

N/A

V. ELIGIBILITY

N/A

VI. SEMINARS ATTENDED

N/A

VII. INVOLVEMENT IN RESEARCH/RESEARCHES CONDUCTED

Quantitative Research

Acceptability of Paragis-Bitter Leaf Herbal Tea

LC-REC Form #003

CV TEMPLATE

LORMA
COLLEGES

CURRICULUM VITAE

INIGO, DEISIREY DIANE G.

I. PERSONAL INFORMATION

Address : Langlangca 2nd, Candon City, Ilocos Sur
Contact No. : 09063975364
Email add : deisireydiane.inigo@lorma.edu
Date of Birth : February 05, 2004
Place of Birth : Tagudin, Ilocos Sur

II. EDUCATIONAL BACKGROUND

Tertiary **2022-Present**

Bachelor of Science in Radiologic Technology
Lorma Colleges
Carlatan, City of San Fernando, La Union

Secondary **2020-2022**

Senior High School
Science, Technology, Engineering, and Mathematics
Candon National High School
Bagani Campo, Candon City, Ilocos Sur

2016-2020

Junior High School
Candon National High School
Bagani Campo, Candon City, Ilocos Sur

Primary **2010-2016**

Langlangca Elementary School
Langlangca 2nd, Candon City, Ilocos Sur

III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

2022	**Dean's Lister** (Second Semester)
2020-2021	**With Honors** (Senior High School)
2010-2016	**Academic Excellence**

IV. WORK EXPERIENCE:

N/A

V. ELIGIBILITY

N/A

VI. SEMINARS ATTENDED

N/A

VII. INVOLVEMENT IN RESEARCH/RESEARCHES CONDUCTED

Quantitative Research (2021)
Factors Affecting the Academic Performance of the STEM Students in Today's Pandemic

Experimental Resarch (2022)
Horseradish Moringa Oleifera as an Anti-corrosive Agent in Metals