Psychosocial Correlates of Sexual Health among Cancer Patients and their Partners-Role of an Intervention

A thesis submitted during 2023 to the
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by

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DECLARATION

I, Dr Bindu Menon K, hereby declare that this thesis entitled "Psychosocial Correlates of Sexual Health among Cancer Patients and their Partners: Role of an Intervention" submitted by me under the guidance and supervision of Prof. G. Padmaja is a bona fide research work, which is also free from plagiarism. I also declare that it has not been submitted previously in part, or in full to this University or any other University or Institution for the award of any degree or diploma. I hereby agree that my thesis can be deposited in Shod Ganga / INFLIBNET.

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CERTIFICATE

This is to certify that the thesis entitled "*Psychosocial Correlates of Sexual Health among Cancer Patients and their Partners-Role of an Intervention*" submitted by Dr Bindu Menon K, bearing Registration Number 19CPPH01 in partial fulfilment of the requirements for award of Doctor of Philosophy in Psychology in the Centre for Health Psychology under School of Medical Sciences is a bona fide work carried out by her under my supervision and guidance.

This thesis is free from plagiarism and has not been submitted previously in part or in full to this or any other University or Institution for award of any degree or diploma.

Further, the student has the following publications before submission of the thesis for adjudication and has produced evidence for the same in the form of the reprint in the relevant area of her research:

1.Menon, B., & Gadiraju, P. (2023). Relationship between Psychological States and Coping in Reproductive Cancer Patients in the Context of the Pandemic. Indian Journal of Medical and Paediatric Oncology.

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has made presentations & participation in the following academic events (Conferences, Symposium/Workshop, and Training Programs).

1.57th National and 26th International Conference of Indian Academy of Applied Psychology (IAAP) 2022.

Received **"Best paper award in the scientific session"** for presenting a paper, 'Psychological states and coping among Reproductive cancer patients – an exploration in the context of Pandemic'.

2. International conference on Innovations in Health Interventions: Traditional, Complimentary &Alternative methods (TCAM) in Holistic Health Care on10th November 2022, Centre for Health Psychology, University of Hyderabad.

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3. Two-day workshop on Mindfulness based CBT, organised by Psycho-oncology division of Malabar Cancer Centre, Kerala on 4th and 5th of June 2022.

4. One month Certificate course in "Pain and Palliative care" at MNJ Institute of Oncology & Regional Cancer Centre – in collaboration with Pain Relief and Palliative Care Society & The Two Worlds Cancer Collaboration, Canada.

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Further, the scholar has passed the following courses towards the fulfilment of coursework requirement for Ph.D.

Course Code	Name	Credits	Pass/Fail
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2.HP827	Book Review (Paper II)	4	Pass
3.HP828	Review Paper	4	Pass
4.HP829	Empirical Paper	4	Pass

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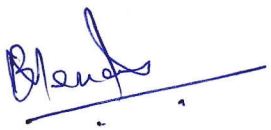

(DR BINDU MENON K)

ABSTRACT

Cancer is a disease affecting millions of people worldwide. There has been a shift in the perception of cancer from a fatal disease to a "chronic" one in the recent years, with a greater focus on concerns related to quality of life, of which sexuality is a primary component (Graziottin,2016). Sexuality is the fundamental and essential domain of human experience that could be damaged due to disease progression or treatments for cancer. In this context, sexual morbidity is an important endpoint in psychosocial research. Cancer patients being vulnerable to sexual dysfunction is largely accepted and acknowledged worldwide. The diagnosis of cancer, followed by subsequent treatments such as surgery, chemotherapy, or radiation therapy can profoundly affect both the physical and mental state and may alter body image, relationship, and sexuality. Cancer is referred to as a "we-disease" because it not only impacts the individual receiving the diagnosis, but also their "significant other" (Kayser, Watson &Andrade, 2007). When a majority of studies are done on physical changes in cancer and sexuality, the present research seeks to comprehend the psychosocial determinants of sexual health among cancer patients and their partners. Along with the biomedical causes, there is a need to understand the underlying psychosocial factors and develop an integrated model for cancer care that is accurate in identifying the psychological, behavioral, and rehabilitative problems associated with cancer treatment. The study utilizes a range of standardized measures to understand psychological distress, body image, illness perception, dimensions of the relationship, quality of life, and sexual functioning**.** This is correlational research to examine the complex interaction between the psychosocial factors governing sexual function, followed by development of a health psychology intervention and testing the developed intervention on a sample using experimental design. A total of 314 subjects (157 couples dealing with cancer illness are included in the

study). The research is conducted in three phases, 230 subjects (115 patients diagnosed with cancer and their partners), both male & female, between the ages 21 to 65 are included in the first phase of research. Based on the results in the explorative phase of the first phase, an intervention is developed integrating the principles of psychology and indigenous methods to preserve sexual and psychological health among the expanding group of cancer patients and the partners. The third and final phase of the research measures the effect of the developed psychosocial intervention using an experimental research design with a sample of 84 subjects (20 cancer patient in the experiment group and 22 cancer patients in the control group along with their partners). Pre and post-test assessments are made to evaluate the developed intervention's effect on cancer patients and their partners. There are higher levels of negative psychological states, body image dissatisfaction, illness perception, sexual dysfunction among cancer patients when compared with their partners. Levels of Intimacy in relationship and quality of life are comparable between cancer patients, and their partners. There is a significant correlation between the variables in the patient group, partner group, and between the patient and partner group, such as psychological state, body image, perception of illness, intimacy, sexual experience, and quality of life. Multiple Hierarchical regression analysis explains predictors of patient's and spouse's quality of life and sexual functioning. Paired t-test analysed the differences in the dimensions between cancer patient and partner group, whereas Hierarchical cluster analysis generates the similarity in responses given by the patient, and partner. Based on the exploration of data, and analysis in the first phase of the study, development of psychological intervention for the cancer patients, along with their partners is focused in the second phase of the study, and evaluation of developed intervention is made by pre-intervention assessment, and post-intervention assessment by conducting paired t test analysis in the final phase of the study. The pre-intervention

assessment and post-intervention assessment explain that there are statistically significant differences, and the effect size is found to be large for the developed intervention. The psychoeducation modules, relaxation response, and couple intervention was found to be significant, and measured by the developed tools- Cancer Information Scale for Couples dealing with Cancer (CISCC), Visual analogue Scale (VAS), Couple activity log records respectively. The present study recognizes the inter-subjective nature of sexual difficulties experienced by the couple after cancer and recommends a relational approach including both the cancer patient and their partner, and has profound implications on psychosocial rehabilitation, focusing on enhancing sexual health and quality of life. Limitations of the study, and future directions were also included.

Keywords: *Psychological states, Body image issues, Cancer and Sexual health, Cancer and Sexuality, Psychological Intervention, Psycho-education, Yoga Nidra*

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ABBREVIATIONS

APA	: American Psychological Association
ApA	: American Psychiatric Association
ASEX	: Arizona Sexual Experience Scale
Brief-IPQ	: Brief – Illness Perception Questionnaire
CDC	: Centre for Disease Control and Prevention
CISCC	: Cancer Information Scale for Couples dealing with Cancer
DALYs	: Years of Life Adjusted for Disability
ECOGPS	: Eastern Cooperative Oncology Group Performance Scale
GLOBOCAN	: Global Cancer Observatory
ICD-10	: International Classification of Diseases10th Revision
ICMR	: Indian Council of Medical Research
NCI	: National Cancer Institute
PAIR	: Personal Assessment of Intimacy in Relationship
PTSD	: Post-traumatic stress disorder
STM	: Systemic Transaction Model
YLDs	: Years Lived with Disability
YLLs	: Years of Life Lost
WHO	: World Health Organisation
WHOQOL-BREF	: World Health Organisation Quality of Life-BREF

CHAPTER- I

INTRODUCTION

Cancer is a major global burden of disease (GBD) that affects millions of people worldwide. Cancer is characterized by aberrant cell proliferation and has the ability to invade or spread to different body parts. While physical and pathological manifestation of cancer is a major concern, much alike are the psychological symptoms where the mind gets infiltrated with self-debilitating thoughts that may lead to distress and dysfunction, negatively impacting the quality of life. The bio-medical causes of cancer are well established, and increasingly research is directing the interest to explore the psycho-physiological and emotional factors connected to cancer and how it is being treated.

Globally, Cancer is the leading cause of both morbidity and mortality. According to Global Cancer Statistics, Cancer accounts for a total of approximately 9.6 million fatalities worldwide, making this the second most common cause of death. In terms of the number of deaths, years of life lost (YLL), and disability-adjusted life years (DALYs), Cancer is listed second only to cardiovascular disease (CVD) among the 22 classes of illnesses and injuries included in the Global Burden of Disease (GBD). The estimated Global Burden of Disease includes information on years lived with a disability, years lost to cancer, and years lived with a death during the previous ten years. Disrupted sexual functioning is commonly reported as a sustained side effect in a majority of cancer types with the progress in disease stage and subsequent tenure in treatment. Sexual dysfunction may appear due to the systemic effects of cancer like organ damage, hormonal changes, psychological distress, or side effects of cancer treatment. Sexual concerns may result in significant emotional distress including depression, body image issues, and, stigma and can have an adverse impact on interpersonal relations. Thus, its effect manifests itself at

both micro and macro levels. As a result, the number of cancer cases worldwide is still rising, placing a severe financial, emotional, and physical burden on people, families, communities, and the healthcare system.

Global Cancer Patterns

The most commonly diagnosed cancers and leading causes of cancer death reported in national levels (GLOBOCAN 2020) show a significant degree of global variation in the main cancer types. At the national level, according to gender, prostate cancer is the most common cancer detected in men in 112 countries; lung cancer is reported in 36 countries, while colorectal and cancers of the liver are reported in 11 countries each. Due to the disease's elevated fatality rate, lung cancer ranks first among cancers that claim the lives of men in 93 countries; prostate cancer comes in second in 48 countries, and liver cancer has been identified in 23 different nations. Women's cancer diagnosis rates are more variable, with cervical and breast cancers contributing to cancer deaths in 110 and 36 countries, causing cancer deaths in 110 countries, and 36 countries respectively, followed by lung cancer in 25 countries (Global Cancer Statistics, 2020; Sung et al., 2021).

Breast Cancer

With a rise of 2.3 million more cases of breast cancer globally, accounting for 11.7% of all cancer cases. This makes it the leading cause of cancer incidence in the year 2020. It is the fifth most common cause of cancer-related death worldwide. In most countries (159 out of 185), breast cancer is first for one in four cancer cases, for one out of six cancer deaths among women, and for mortality in 110 countries. The goal of breast cancer screening programs is to lower the death rate from the disease by promoting early detection and efficient treatment.

Lung Cancer

With around 2.2 million new cases and 1.8 million deaths from cancer in 2020, lung cancer is the second most common cancer to be diagnosed and the leading cause of cancer-related death. In men, cancer of the lung is the primary cause of cancer-associated complications and death; in women, it ranks second in terms of mortality following breast cancer and third in terms of incidence after colorectal and breast cancer. Since smoking is thought to be the main cause of lung cancer deaths around the globe, policies and regulations focused on controlling the use of tobacco are necessary to reduce the incidence of lung cancer significantly.

Prostate cancer

Prostate cancer is found to be the cause of 375 000 deaths and 1.4 million new cases globally. In 2020, prostate cancer ranked fifth in terms of cancer-related deaths among men and was the second fastest-growing kind of cancer. In 112 out of 185 countries worldwide, it is also the most common type of malignancy diagnosed in men. The known indicators of risk for prostate cancer include growing older, having a family history of the disease, having specific genetic mutations, and having disorders like Lynch syndrome. The risk of advanced prostate cancer may be increased by smoking, being overweight, and having dietary deficiencies. It is possible to identify preclinical cancers with prostate specific antigen (PSA) testing, and appropriate lifestyle modifications are advised to avoid any complications.

Colorectal cancer

Incidence-wise, colorectal cancer is ranked third, but mortality-wise, it is ranked second. It was projected that there will be over 1.9 million new cases of colorectal cancer in 2020, including anal cancer, and 935, 000 fatalities. A shift in diet and lifestyle toward

consuming more food derived from animals is suggested, and the risk of colorectal cancer is linked to sedentary lifestyles that result in obesity. Smoking, drinking a lot of alcohol, and consuming red or processed meat increase the risk. Colonoscopy screening, better eating and lifestyle choices, and a decrease in alcohol and tobacco use all contribute to lessening the disease's increasing burden.

Cervical Cancer

With a total of 604,000 new cases and 342,000 deaths worldwide in 2020, cervical cancer ranks as the fourth most commonly diagnosed cancer as well as the fourth leading cause of cancer-related deaths among women. The risk factors include Human papilloma virus (HPV) infection and additional significant cofactors, such as smoking, a higher number of pregnancies, oral contraceptive use for a longer period of time, and sexually transmitted infections (HIV and Chlamydia trachomatis). Screening and HPV vaccination is strongly recommended to prevent cervical cancer.

Uterine cancer

With 417,000 new cases and 97,000 deaths from uterine corpus cancer in 2020, it is the sixth most common cancer in women to receive a diagnosis.

Gastric cancer

With an estimated 769,000 deaths and over a million new cases in 2020, cancer is still a major global health concern. Regarding incidence and mortality, stomach cancer is ranked fifth and fourth globally, respectively, with rates twice as high in men as in women. The two types of stomach cancer- whether cardia, or upper stomach, and non-cardia, or lower stomach—are distinguished by their topographical subsites. Approximately 50% of people worldwide suffer from an infection caused by the helicobacter pylori bacteria, which is thought to be the primary cause of non-cardia

gastric cancer. A low intake of fruits and raw vegetables, and use of tobacco products, alcohol, salt-preserved foods, a diet heavy in processed meat, grilled or barbecued meat, and fish are the other risk factors that contribute to this.

There is evidence of two distinct causes for stomach cancer: H. pylori infection in some cases and excess weight, damage from acid reflux disease, and features resembling esophageal adenocarcinoma in others.

Hepatic cancer

Primary liver cancer ranks as the sixth most common cancer in terms of diagnoses and. the third most frequent cause of cancer-related deaths worldwide in 2020, accounting for 830,000 deaths and 906,000 new cases. Liver cancer is the fifth most common cancer globally, and in most areas, male mortality from the disease is two to three times higher than that of female mortality. Of all primary liver cancer cases, 75% to 85% are caused by hepatocellular carcinoma (HCC), 10% to 15% are caused by intrahepatic cholangiocarcinoma, and there are a few other rare cases as well. Aflatoxin-contaminated foods, excessive alcohol intake, being overweight, type 2 diabetes, smoking, and chronic hepatitis B or hepatitis C virus infection are the main risk factors for hepatocellular carcinoma (HCC). Vaccination to prevent hepatitis infection, awareness regarding the HBV vaccination and appropriate safety precautions must be raised.

Oral Cancer

The most frequent cancers found in South-Central Asia (India, Sri Lanka, and Pakistan) and Melanesia are oral and lip cancers, with tobacco product use and betel chewing accounting for the highest incidence rate in both sexes. In India, it is also the leading cause of death for men.

In summary, 19.3 million new cases of cancer and approximately 10 million cancer-related deaths were anticipated according to the GLOBOCAN 2020 study (Sung et al., 2021). If the national rates estimated in 2020 remain the same, it is estimated that there will be 28.4 million new cases of cancer in 2040, an increase of 47% from the 19.3 million cases in 2020. The startling picture of the incidence and prevalence of various cancer types worldwide is explained by the statistics.

Prevalence of Cancer in India

The Prevalence and burden of Cancer disease is very high in India showing its wrath. Today, Cancer is a common household word heard very often and many report being closely associated with at least one dear or near one with cancer. More than 100 types of cancers are known, and the five most commonly reported cases of cancer in India are categorized as Cancer in breast, oral cavity, cervix, lung, and gastrointestinal area. Based on National Cancer Registry Program (NCRP) and Population-based Cancer Registries (PBCR), the national and sub-national burden of cancer in India has been measured by the Indian Council of Medical Research (ICMR) and the National Centre for Disease Informatics & Research (NCDIR) using crude incidences, mortality, years lived with a disability (YLDs), years of life lost (YLLs), and years of life adjusted for disability (DALYs). It is anticipated that the number of disability-adjusted life years (DALYs) caused by cancer will increase to 29.8 million in India by 2025 from 26.7 million in 2021. (Kulothungan et al, 2022). As per the "Burden of Cancers in India" report by the Indian Council of Medical Research, seven cancer types constituted nearly 45% of the overall disease burden. These represent cancers of the cervix uteri (4.3%), liver (4.6%), stomach (5.2%), esophagus (5.8%), throat (5.7%), lungs (10.6%), breast (10.5%), and mouth (5.7%). The National Centre for Disease Informatics and Research (NCDIR), which provided the rationale for the 2021–2025 projections, projects that men will have

contributed 14.7 million Years of Life Lost (YLLs), 0.72 million Years Lived with Disability (YLDs), and 15.5 million Disability Adjusted Life Years (DALYs) in 2025. The estimated numbers for women are 14.3 DALYs, 0.69 million YLDs, and 13.6 million YLLs.

According to a report GLOBOCAN, (Global Cancer Statistics, 2020) by the international agency for research on cancer, by 2020, 2.08 million people in India are expected to have cancer, which would be a 57.5 per cent increase by 2040. As life expectancy rises and lifestyles change due to economic development, cancer cases are predicted to increase even further. In India, approximately one in nine individuals will eventually develop cancer. When assessing the epidemiological data from a global standpoint, it is important to consider the psycho-social needs of cancer patients as well as their quality of life.

Biomedical aspects of Cancer

A group of cells known as cancer often originate from a single cell that has grown out of control due to the absence of its normal regulatory systems. Tumors are masses of cancerous tissue that arise from any tissue within an organ as a result of the growth and multiplication of cancerous cells. Tumors can be benign or malignant and can invade and destroy adjacent tissues and organs. Cancer is broadly classified based on its area of origin. Carcinoma is a cancer of epithelial cells of the body that forms the lining of external and internal surfaces of the body. Adenocarcinoma originates from glandular tissue, and Sarcoma originates from muscular tissues such as bone and cartilage. The tissue that produces blood cells is the source of leukemias, while lymphatic tissues are the source of lymphomas.

Cancers create symptoms through pushing against other tissues, growing into them and destroying them, releasing toxins, and consuming nutrients and energy that are meant for other body processes. When cancer spreads (metastasizes) to other parts of the body, it may cause distinct symptoms from the ones it initially causes at the original site. Swollen lymph nodes, recurrent fever, pain, bleeding, unexplained weight loss and exhaustion, and a recent change in bowel habits - constipation or diarrhea - all of which should be taken seriously as potential cancer warning signs.

Depression is a common side effect of cancer that can be linked to illness symptoms, a fear of passing away or experiencing a decline in health, and a loss of personal autonomy. Moreover, certain cancers may release chemicals that alter the tissues and consequently cause depression. A condition known as paraneoplastic syndrome occurs when chemicals made by cancers disperse throughout the body. Certain substances cause auto-immune reactions that harm organs or tissues, while other substances directly interfere with organ function or cause tissue destruction that results in symptoms. such as high blood pressure, low blood glucose, poly neuropathy (peripheral nerve dysfunction leading to reduced reflexes, loss of feeling, and weakness), subacute cerebellar degeneration, subacute motor neuropathy, Cushing's syndrome, hyperthyroidism, etc.

Multiple factors contribute to cancer, and early treatment increases the likelihood of recovery. Staging a cancer diagnosis indicates how far along it has progressed in terms of its size, location, growth, and ability to spread to adjacent organs and structures. The staging process aids in determining the best course of action and cancer prognosis.

Treating cancer is one of the most difficult medical conditions to manage, requiring a multidisciplinary team of medical professionals, including primary care physicians, oncologists, surgeons, radiotherapists, pathologists, nurses, physiotherapists,

psychologists, social workers, dieticians, and pharmacists. The main goals of treatment are to completely eradicate the cancer, either with a single treatment or a combination of treatments such as chemotherapy, radiation therapy, and surgery, and to lessen the likelihood of metastasis.

Drugs are used in chemotherapy to kill cancer cells. Chemotherapy drugs can be used to kill cancerous cells that have spread to other parts of the body in addition to helping to eradicate the original cancer. Chemotherapy can be administered alone or in conjunction with surgery and radiation therapy.

Among the most traditional and oftentimes most successful cancer treatments is surgery. Surgery is the sole or primary treatment option for tumors that have not spread from their original site of growth. Many cancers, such as squamous cell cases of head and neck cancers, lung cancer, seminoma (testicular cancer), prostate cancer, early-stage breast cancer, medulloblastoma (tumor of the brain or spinal cord), etc., can be cured in large part with radiation therapy. Combination therapy including a combination of surgery, radiation and chemotherapy is the best approach. Surgery or radiation therapy can be used to treat localized cancer, and chemotherapy can be used to kill any cancer cells that may have spread. Combination chemotherapy, in which different chemotherapy drugs are used to target different stages of the cancer cell's life cycle, is a common practice. The idea behind this approach is to increase the number of cancer cells killed by using medication with different properties. Determining whether to use a combination of therapies or a single therapy depends on the stage of the cancer.

In order to strengthen the body's defenses against cancer, immunotherapy is essential. Certain types of immune-therapy increase the body's ability to produce antibodies or T lymphocytes, or immune cells, by giving vaccinations containing antigens

derived from tumor cells. Biologic response modifiers work by encouraging the production of chemical messengers (mediators) by normal cells, which in turn helps the immune system locate and eliminate cancer cells. The most well-known and frequently used biological response modifier, interferon, is used to treat a number of cancers.

Psychosocial effects of Cancer

Cancer is a "traumatic" incident with aftereffects on the body, mind, relationships, and society that need to be watched over during the course of the illness and into survivorship. When someone has cancer, their entire sense of self is transformed; their diagnosis shifts their understanding of time, space, and existence, their course of treatment, their recovery, their recurrence, or their move to palliative and end-of-life care. The past, present, and future are included in this context's definition of time. One's personal area, place of residence, and context within the world are the boundaries of space that are discussed. There are four dimensions to existence: the relational dimensions with others (Mit welt), the biological dimension (Umwelt), the meaningfulness of one's existence (Uber welt), and the spiritual dimension (Eigen welt), event that should be closely watched throughout the course of the illness and into survivorship because it has implications for the body, the mind, relationships, and society.

The diagnosis of cancer can be extremely stressful, triggering a chain of emotional responses such as denial, anger, fear of death, helplessness and hopelessness. The family, and especially the romantic partner undergoes the same emotional response as of patient. Gradually, there would be a shift in their roles and responsibilities, such as the partner becomes the main care provider to the patient. Subsequently, changes may appear in their family dynamics, intimacy, sexual expression and love life. A glimpse into various psychosocial factors and outcomes may be attained by understanding the case history of

each patient, as well as their family dynamics. Along with medical history, considering the cultural background of a patient and their family can impact how they define a worthwhile life and how they view their illness. This includes beliefs, attitudes, and values. Also, the family structure, health literacy, language, socioeconomic status, religious and community affiliations, social support networks, resources, living arrangements, and workplace difficulties are all significant factors. It is important to talk about important issues pertaining to gender and sexuality in cancer patients, as well as how different cancer types and treatments affect how someone feels about their body, looks, and sexual functioning. To record the effects of cancer and its treatment on a patient's emotional health, psychosocial screening and assessment are therefore crucial to record the psychological effects of cancer and its treatment on a patient.

Models of Health

Several models of health were reviewed for the study, and health psychology models relevant for the current study are described here. In order to fully comprehend a person's medical condition, the Bio Psychosocial Model, which George Engel developed in 1977, contends that psychological and social factors must also be taken into account in addition to biological factors. The fundamental idea of the biopsychosocial model is the significance it accords to the relationships among the three domains of biological, psychological, and social functioning – all of which are important in the development of health and illness. Whereas, the connection between a person's beliefs and behaviours is examined by the health belief model. By focusing on individualized therapy based on the patients' beliefs, this model assists us in comprehending the factors influencing the patients' perceptions, beliefs, and behaviour when planning their care. Leventhal's Common-Sense Model of Illness is studied to understand people's responses to illness. A patient's illness perceptions are made up of personal experiences and lay knowledge that

they have gained. The model suggests that coping strategies are directly influenced by perceptions of illness, and that perceptions in turn affect outcomes. Another model reviewed is ‘Self-Regulation Model’, that states patients develop emotional and cognitive representations of their illnesses in response to symptoms and other indicators of illness, which may trigger coping mechanisms. It also describes how patients' health beliefs and behaviours are influenced by their cultural backgrounds, educational attainment, and socioeconomic status.

Systematic Transaction Model (Kelley et al.,1983) highlights the mutuality and interdependence between partners. It suggests that a partner's everyday stress experiences and behaviour during stressful situations have a significant and frequent influence on their partner's experiences in a reciprocal manner Important components of the systemic transaction model (STM) are "we-disease" and "we-assessments." Manne and Badr's (2008) Relationship-Intimacy Model elucidate how relationship-enhancing behaviours can enhance a couple's intimacy and improve their psychological and relational adaptation to cancer. The existing models of Sexual Health such as PLISSIT Model, Sexual Health & Well-being Model, and Biopsychosocial conceptualisation of Sexuality is carefully studied.

The Holistic Health Model (Mato-Juhasz, et al., 2016) highlights how healthcare has started to view health from a more holistic standpoint, valuing an individual's emotional and spiritual well-being in addition to their physical health and working to foster environments that support optimal health. Likewise, achieving greater levels of wellbeing is the main goal of the health promotion model. Integrating this model, healthcare providers can better support patients in making the changes they want to see in their health and encourage better or optimal health by offering positive resources (individualized resolutions).

India is a highly stratified and ethnically diverse country where personal caregiving is primarily the responsibility of the family and other kinship ties. The spouse or the partner probably undergoes a very similar sequence of emotional reactions as the patient and therefore, there is a need to examine the psychosocial needs of the partner from a relational perspective. Research focuses on the experience of cancer patient's partners to have knowledge about the effects of the illness on them and how they manage and adapt to it (Carlson, et al., 2000). Cancer patients' suffering is not exclusive to them; their partners also face several psychological difficulties as a result of the disease (Birnie, Garland & Carlson; 2010). The burden of cancer patients' unrelieved symptoms during the previous three months and its psychological impact on the surviving partner was determined by conducting a nationwide follow-up of patients with the disease and their partners (Valdimarsdottir et al., 2002). The earlier study investigated and found that the partner's psychological morbidity was associated with the patient's unrelieved emotional symptoms. Though there was adequate access to physical symptoms, but no proper measure for psychological symptom control in the patient group and the relative risk for the partners psychological morbidity for depression and anxiety was also found to be proportionally high. The focus of the research is on diagnosing and treating psychological issues in terminally ill cancer patients, as this could potentially prevent long-term psychological morbidity in partners in addition to helping to improve the patients' quality of life. Another study (Wootten, et al., 2014) discusses on how prostate cancer affects the health of the patient and their partner. The treatment of prostate cancer results in difficulties such as patients' weariness, gastrointestinal issues, sexual dysfunction, decreased libido, and psychological trauma. The partner experiences more emotional disturbance and distress than the patient does, according to this study. Partners not only face their own

emotional difficulties, but also, experience potential role transitions, financial worries as well as potential strain on their marriage and sex life.

The Psychological Sequelae of Cancer

The ‘psychological sequelae’ is explained as a condition that follows from an existing disease or illness. Constant worry, feeling distressed, anxious, depressed, hopeless, fear of recurrence, body dissatisfaction, and somatic symptoms are frequently reported by the cancer patients. It is important to study the ‘psychological factors’ which pertain to an individual's emotions, cognition, and other aspects that influence their mindset, actions, and overall functioning.

Psycho-oncology is a multidisciplinary subspeciality in oncology that that talks about the two psychological aspects of cancer. The initial aspect to consider is the patients', families', and caregivers' psychological response during different stages of cancer from the diagnosis to treatment. Additionally, the psychosocial elements that could influence the course of the illness constitute the second dimension. (Holland and Weiss, 2010). A considerable number of psycho-oncology studies have found that 30–40% of cancer patients experience emotional disorders, as a result of their disease and its treatments, primarily depression, anxiety, and adjustment disorders which are classified under the ICD-10 AND DSM-IV taxonomy system (Mitchell, et al., 2011).

Several psychological outcomes are discussed in the psycho-oncology research, and specific research with relevance to couple where one of them suffers with cancer, may be of special importance. A significant portion of cancer patients experience psychological distress that eventually leads to psychiatric problems and psychological crises when they are ill and are receiving medical care. Psychological distress is a condition of intense emotional suffering brought on by demands and stressors that are

hard to meet. It denotes tiredness on the mental, emotional, or physical levels. The psychological distress of the ‘significant other’- a spouse or a partner needs to be addressed who undergoes the same emotional trauma as that of a patient from the diagnosis of cancer, subsequent treatment, and the stage of survivorship. The guidelines for managing distress have been developed since 1997 by the National Comprehensive Cancer Network (NCCN) Distress Management Panel, composed of healthcare professionals from various disciplines. The "distress thermometer" has become the gold standard for the quick screening of distress. It is a small, portable device that has been identified as the "sixth vital sign," with the same importance as blood pressure, temperature, heart rate, respiration rate, and pain (Bultz & Berman, 2010).

Mental health conditions like anxiety and depression are other psychological states that are reported not only in the patients, but also in the primary caregivers, including the spouse as the main caregiver. Psychological factor that cancer patients and their families frequently report is depression. In addition to being difficult to diagnose, the concept of depression is difficult to explain theoretically. Depression is clinically diagnosed with five or more symptoms that include symptoms of low mood or anhedonia (loss of interest or pleasure) for a period of 2 weeks as the main criteria as per DSM-5. There could be associated somatic and non-somatic symptoms including altered appetite or weight, trouble sleeping (hypersomnia or insomnia), psychomotor agitation or retardation, exhaustion or low energy, difficulty concentrating, feelings of excessive guilt or worthlessness, and suicidality. Low mood. energy levels, anxiety. nervousness and somatic changes are commonly reported during the different phases of cancer disease. Anxiety or nervousness is frequently reported among patients diagnosed with cancer and their family members. The feeling of apprehension, unease, or concern that arises when we perceive a threat to our safety is known as anxiety (Vye, Scholljegerdes & Welch,

2007). Anxiety is a state of intense worry that results in an unpleasant and uncomfortable sense of unease as well as additional physical symptoms. These include palpitation, sweating, anxious behaviours such as restlessness, unnecessary worry, poor attention and concentration, or there could be symptoms such as muscle tightness, weakness or fatigue. Higher prevalence of anxiety is usually reported in extensive diseases, where the patients and their family members are very anxious, being apprehensive about the illness (Noyes, et al.,1998). Anxiety is typically noted to be high during the investigation and diagnosis phases, as well as in the early stages of cancer symptoms, and it seems to rise with the progression of disease. Prolonged anxiety can cause a delay in diagnosis. or neglect of treatment and can adversely affect the quality of life of cancer patients and their families and should be addressed. Often anxiety state may be associated with somatic manifestation of symptoms.

The aetiology of somatisation is not completely understood in cancer. There is challenge to differentiate and assess the psychopathological components from those biological or physical symptoms which are related to cancer and cancer treatment. It's critical to realize that physical symptoms may be connected to anxiety and depression. The experience of somatic symptoms may also be exaggerated by somatization, physical complaints, and psychological distress (Chaturvedi & Maguire, 2006). The most common somatic symptoms in cancer are pain, extreme fatigue or weakness, anorexia, nausea, disturbed sleep, breathlessness. palpitation and loss of memory. The presence of somatic symptoms may lead to abnormal illness behaviour, that negatively influence coping and interfere with treatment procedures and overall outcome of cancer.

A review (Pitceathly & Marguire, 2003) findings on the psychological effects of cancer on patients' significant others and partners revealed that when the disease progresses and treatment becomes palliative, caregivers are likely to experience increased

distress and psychiatric morbidity. The study also showed that caregivers are vulnerable when they don't have a support system, or while facing relationship difficulties with the patient. Another study (Segrin, et al., 2007) was conducted to determine the extent of interdependence on anxiety and psychological distress in women diagnosed with breast cancer and their partners, and the findings showed a persistent correlation between the anxiety experienced by breast cancer patients and their partner's anxiety. According to the structural equation analyses, partners' anxiety primarily influences the anxiety of women who have been diagnosed with breast cancer within a couple. Anxiety in partners was also linked to other measures of the women's health, including fatigue, depression, and symptom control.

When a family member receives a cancer diagnosis, it signifies something important in their lives. It may be worth noting here that not only the disease and the symptoms, but the perceptions of the person with cancer as well as the primary caregivers about the illness may also play a major role in dealing with cancer and the prognosis. One such construct which looks into the perceptions is perception of Illness. A patient's cognitive evaluation and subjective comprehension of a medical condition and its possible outcomes constitute their illness perception (Broadbent et al., 2015). The perception of illness focuses on an individual's perceptions and conceptualizes having a disease (Weinman and Petne,1997). This could involve both positive and negative beliefs that affect how well a person can manage their illness and whether they see it as threatening or manageable (Bonsaksen et al., 2015). The self-regulation model serves as the basis for research on this perception of illness. According to this model, patients respond to symptoms and indications of their illnesses by creating mental and emotional representations of them, which trigger coping mechanisms. The cultural backgrounds, education and socio-economic condition influence patients' health beliefs and behaviours.

How cancer patients and family perceive the disease can influence how they self-manage during the disease process and recovery. An older study (Germino & Funk,1995) focused on the meaning and significance of Cancer and partner relationship, and interviewed 50 people who had received a cancer diagnosis recently, along with their partners, in-depth. According to interview data, patients and their partners sought a deeper understanding of the illness that would lessen its threat, and statistical analyses demonstrated the importance of meaning in relation to particular facets of adjustment.

The perceptions of the patient with cancer who is under treatment such as surgery, chemotherapy and radiation may extend not only to the illness but also how his/her body has changed going to the illness as well as treatment. While some may undergo removal of an organ or body part affected with cancer, many may have to put up with the side effects of cancer treatment, which could cause issues with body image. In the field of psychology, the concept of body image is generally understood to be multidimensional, encompassing thoughts, feelings, and perceptions that hinder one's own body, sexuality, and functionality, ultimately impacting one's quality of life. There are four components to body image: affective (a person's feelings about their appearance); perceptual (a person's view of themselves); cognitive- the thoughts and beliefs the person holds about his/her body; and behavioural -the behaviours in relation to the way the person looks. Another research (Hoellenn, et al., 2019) described that when it comes to body image, breast cancer patients are far more concerned than their male partners because these worries are frequently motivated by a fear of losing their partner's attraction. Whereas, the study reported that the partners' primary concerns are surgical and anaesthesia-related complications, and they exhibited noticeably higher anxiety levels compared to patients when it came to anaesthesia-related complications ($p<0.001$). Anxiety levels

among patients were higher for post-operative scars, hair loss, and weight gain during chemotherapy shows statistical significance.

Intimate Interpersonal relationship between couples is a significant factor affecting emotional health and well-being in the context of cancer. A strong, close-knit, or intense social and emotional bond between two or more individuals who have similar interests or aspirations, like romantic partners or close family members, is referred to as an interpersonal relationship. "Being connected" is the state of a relationship. Essential aspects of a relationship include intimacy, togetherness, communication, and commitment. The closeness of their marriage significantly influences psychological adaptation to cancer in patients and their partners. A companion's comprehension of the patient's experience with breast or prostate cancer was examined in an exploratory study (Carlson, et al., 2001), which also assessed the degree to which the patient's and partner's perceptions of social support matched the cancer experience. The results show that female partners were better at understanding their spouse's experience with prostate cancer than male partners were with women's breast cancer experiences. The study found that men tended to overestimate the distress levels that breast cancer patients reported to themselves. Compared to couples with breast cancer, couples with prostate cancer reported higher levels of agreement from patients and partners regarding social support within the relationship and the cancer experience. The study came to the conclusion that age and duration of marriage, which was longer in prostate couples, may play a significant role in this, in addition to gender. Both sets of patients reported feeling understood and well-adjusted, and they were happy with the partners' support.

In accordance with the relationship intimacy model of couple psychosocial adaptation to cancer, patient and partner behaviours can either strengthen or weaken the degree of intimacy in their relationship. The intimacy process model of interpersonal

relationships emphasises two essential elements: partner responsiveness and self-disclosure. The process through which a person shares significant, self-relevant feelings and information with another and, based on that other's response, feels heard, valued, and cared for is referred to in this model as intimacy. Intimacy, love, and affection are linked to each partner's quality of life and are beneficial to the health of relationships.

The World Health Organization defines quality of life as an individual's perception of their present circumstances in relation to their goals, standards, expectations, and concerns., as well as the social and cultural context in which they live (Group W, 1998). The concept of the quality of life is multifaceted and has no set definition. It's a wide range of concepts intricately impacted by an individual's physical and mental well-being, degree of independence, social connections, personal and religious beliefs, and interaction with prominent environmental elements (Saxena, et al.,1997).

A person's standard of health, comfort, and happiness can be summed up as their quality of life. The existence of negative factors such as living conditions, depression, anxiety, or low functional status can have a detrimental impact on an individual's quality of life. According to Roila and Cortesi (2001), quality of life is influenced by how a patient perceives their own physical, psychological, and social aspects of health following a diagnosis and course of treatment. According to a qualitative investigation (Wootten et al., 2014), prostate cancer has a significant negative influence on a number of partner well-being factors. In order to help the couple lessen the impact that prostate cancer and its treatment have on their relationship, aid the patient's recovery, and enhance partner's well-being, an efficient intervention that reduces distress and improves communication and coping in the dyad is recommended.

The description thus considered the psychological features of cancer, as well as outcomes of the various psychological states described among the persons with cancer and their partners as caregivers. With the life partner as care giver, one more important domain that needs attention is the sexual health and intimacy among the couples, when one of them is the patient and, the other is the primary caregiver.

Cancer and Sexual Health

Sexual health is an important part of physical and mental health. World Health Organization (WHO) defines ‘Sexual Health as a state of physical, emotional, mental and social well-being in relation to sexuality, and not merely the absence of disease, dysfunction or infirmity’ (World Health Organization, 2010). Sexual health is the enrichment and enhancement of personality, communication, and love through the integration of the physical, emotional, intellectual, and social components of sexuality. Intimate relationships and sexual fulfilment are essential elements of good sexual health.

Cancer patients have commonly reported persistent difficulties with sexual response desire, functioning or orgasm. It is observed that sexual concerns may often lead to distress and dissatisfaction. The progression of cancer and subsequent treatment may have a negative effect on sexual health. Cancer treatments may involve radiation treatment, surgical operations, and further chemotherapy that alters the sexual organs hormonally and physically. Patients' perceptions of themselves and their family are impacted by the physical and psychological effects on sexual health, which frequently lead to alterations in one's perception of their body and sense of self. People find it difficult to participate in social norms and gender roles that defined their lives before cancer as a result of these changes. (Gender and Sexuality: Psychosocial Aspects in

Cancer). It may have a negative impact on sexuality, affecting both cancer patients' and their partners' sexual and reproductive health.

Being human involves having a complex combination of mental, emotional, and physical signals that make up one's sexuality. These signals can be changed by age, experience, illness, and therapy. The endocrine, vascular, and neurological systems are necessary for sexual functioning. Likewise, the psychosocial factors such as family history, interpersonal relationships, communication, and intimacy, along with individual characteristics such as psychological states, illness perception, body image, sexual schema, and religious and cultural beliefs have a significant impact on it. Fischer, Marguerie & Brotto (2019) conducted a mixed method study, in which the quantitative phase of the study should women diagnosed with ovarian cancer add higher rates of sexual dysfunction and sexual distress, and reduced satisfaction in relationships and higher depression rates. Schover (2019) research findings indicated that 60% of cancer patients experience chronic sexual dysfunction; nonetheless, fewer than 25% of patients solely seek medical assistance for their sexual problems. Sexual concerns are a complex topic to discuss with cancer patients, according to the literature (Johanna & Margaret, 2019). There is insufficient knowledge or expertise among the medical staff and clinicians in this area and the problems of sexual functioning are not adequately addressed and often neglected too. As cancer patients are most vulnerable to sexual dysfunction and with known medical causes that are of physiological origin, there is a need to emphasize underlying psychosocial factors and their impact on sexual functioning.

Research has shown that sexuality-related distress is extremely common among cancer survivors - one in three reported experiencing it, and more than two-thirds reported experiencing pain and dysfunction during sexual activity; 40% of respondents said they

experienced depression while with their partner, and 56% supported low desire and pleasure (Carter, Chi & Brown, et al., 2010). Sexual functioning, appearance, and self-perception can all be affected by partner attitudes and behaviors related to intimacy and marriage, as well as the location, shape, and visibility of surgical and radiation scars. When comprehending the impact of cancer on sexuality, it is important to take into account the specificity of the issues related to the biological and clinical aspects of the disease, since the perception of a cancer patient and their partner is influenced by their cultural background.

Sexual function is specifically correlated with cancer pathologies, particularly those affecting the breast, cervix, and ovary in females and the prostate, penis, and testicles in males. These pathologies have more obvious effects on gender identity and sexual health. A person's unique understanding of their sexual identity, which encompasses the biological, psychological, interpersonal, and behavioral domains, is known as their sexual schema. Impotence and infertility can be devastating blows to a man's profound sense of masculinity. In the same way, female cancer patients may feel less feminine or embarrassed when having sex as a result of genital mutilations, breast removal, or hormonal treatment-induced menstrual cycle disruption. An ostomy in bladder and colon cases, a stoma elsewhere in the body, or scars following surgery can cause post-operative problems that impact the patient's interest in sexual activity and body image. However, sex remains a taboo, and sexual functioning is a difficult topic to discuss with cancer patients. This is much true in the Indian context where sexual issues are not discussed and are considered an embarrassment to discuss even with the intimate partners. This could be significantly impacted by a number of attitudes and beliefs. There is a severe lack of data on sexual health and health-related quality of life among people from indigenous and developing nations.

Cancer – the “we disease”

Cancer patients and family frequently experience psychological problems related to cancer diagnosis, treatment effects, fear of recurrence, survivorship or end of life. It is not just the patient but there are incidences where the family, especially the spouse or the partner feels depressed and anxious about the illness (Tolentino and Schmidt, 2018). It is clear that in every stage of the illness, the unmet psychosocial needs of the patient and family are significant predictors of psychological morbidity. The spouse or partner is a silent sufferer on this journey and may exhibit psychological concerns similar to the patient, such as anxiety, depression, and issues with body image. These concerns can negatively impact the patient's quality of life, intimacy, and relationship. A study conducted by Bajpai and Shylasree (2018) observed that coping with the sexual changes after cancer can significantly impair the quality of life. The study emphasises on the need of counselling regarding the potential physiological, hormonal, and psychosocial effects of diseases and treatments on sexuality. The therapies should include both the patient and partner, as it helps to address the sexual distress and relationship concerns and organize interventions to enhance one's sexual well-being, and quality of life.

The terms "we-disease" and "we-ness," are important components of the "systemic transaction model" which suggest that a partner's regular and profound experiences with stress, as well as their behavior under stress, have a reciprocal effect on their partner's experiences (Kelley, et al.,1983). This explains that couple dealing with cancer disease are ‘sailing together’ and they experience similar emotional responses and psychological sequelae in their journey of cancer. It has been highlighted that a "key component" of providing comprehensive cancer care is acknowledging the concerns that patients and their loved ones may have regarding treatment and care.

Research and initiatives that cover the full range of cancer treatment, such as fertility tests, sexual health interventions, and assessments of sexual health, are urgently needed in light of the "burden of cancer" among the expanding community of cancer patients and survivors. Incorporating interventions related to sexuality, family building, and couple-oriented quality of life is crucial to addressing the psychological effects of cancer and lower cancer-related mortality by enhancing the quality of life associated with sexual health. As a result, addressing sexual concerns is a crucial part of treatment for cancer that takes the whole person into account, including the patient's partner.

The current study's objective is to create an intervention based on a health psychology model and assess the psychosocial aspects of sexual and psychological health in cancer patients and their partners. Instead of focusing on biological factors like medication, psychosocial interventions emphasize psychological, behavioral, and social factors. That being said, the goal of the current study is to enhance both the "quality of life" for patients and enhancing "quality of care" by incorporating psycho-oncology into comprehensive cancer care.

CHAPTER-II

REVIEW OF LITERATURE

Research shows several studies in the area of reproductive and sexual health in chronic illnesses such as cardiovascular diseases, neuromuscular, auto-immune disorders, diabetes, cancer, etc can impair sexual functioning, and negatively impact sexual and reproductive health. Sexual dysfunction in populations with chronic illnesses may be caused by a number of psychosocial factors, including depressed mood (Seidman & Rose, 2000), body image dissatisfaction (Schiavi et al., 1995), and relationship concerns (Enzlin et al., 2002).

Research pertaining to cancer predominantly explains the biomedical aspects of cancer, and changes to sexual health and wellbeing are documented as a long-term adverse effect of cancer and its treatments. These modifications may have an effect on one's physical health, psychological well-being, relationship, and intimacy. Annually, the number of cases of cancer is increasing, and the patients' quality of life is severely impacted by distress, depression, anxiety, somatic symptoms, and low functional status. Intimacy and sexuality are significant aspects of a person's quality of life (Flynn et al., 2016), and there is a special need to preserve sexual health in the growing community of people diagnosed with cancer as well as, cancer survivors. The topic selected for the present study is “Psychosocial correlates of Sexual health among Cancer patients and their Partners- Role of an intervention”. This study aims to explore the psychosocial correlates of sexual health among cancer patients and their partners. A review of literature has been done to understand the research and development in the domain of Psycho-Oncology with respect to sexual health and other psychosocial domains among patients diagnosed with cancer and partners. The study analyses the psychological (affective,

cognitive, behavioural components) and social factors (relationship and intimacy) to better comprehend the psychosocial aspects of sexual health and how cancer patients' and their partners' quality of life is impacted by it.

The present chapter comprises of in-depth review of literature pertaining to variables such as psychological states, illness perception, body image, relationship/intimacy, sexual (dys)functioning and quality of life in cancer patients and their partners. In order to approach the study's variables from a relational standpoint, the review first looks at the psychological states of partners and cancer patients.

Cancer: a psychological perspective

Advancement in medical research and healthcare delivery has significantly reduced mortality and improved life expectancy, but the ‘emotional dimensions’ of chronic disease conditions often take a back seat in terms of the care provided. Studies from India have reported that psychological morbidity is higher among patients diagnosed with chronic illness when compared to normal healthy subjects (Balajee, Kumar & Shidam, 2017). Discussing on the psychological problems of patients with cancer, Gregurek et al., (2010) observed in the research that one-third of the patients diagnosed with cancer will experience psychological distress, and the most commonly reported psychiatric disorders are depression, anxiety and adjustment disorder. Studies such as (Okeke et al., 2023; Herschbach, 2004) investigated psychological distress in cancer patients using distress thermometer have reported 68% subjects scored elevated levels of distress. The study investigated and reported the most predominant cause of psychological distress was found to be fatigue (69%). followed by pain (59%), difficulty in transportation (59%). anxiety (57%), sadness (50%), anger (45 %) and depression (44%).

A comprehensive analysis of 24 physical symptoms and 10 psychological symptoms among cancer survivors in a study (Hong et al., 2023) including children, adolescents, and young adults observed that in terms of psychological symptoms, anxiety and depression were most frequently reported, while fatigue and sleep disturbance were the most researched physical symptoms. The study revealed that anxiety about illness may often lead to delay in diagnosis of cancer, and this may impair the prospects of treatment and care by 10- 20 %. The research highlights the importance of providing information on potential cancer symptoms, treatment options, and ongoing follow-up during the survivorship period. An earlier study found that in addition to depression, half of cancer patients also had a psychiatric disorder, typically adjustment disorder (Spiegel, 1996). A review (Caplette, 2008) describes depression associated with metastatic breast cancer and points that despite the fact the depression is associated with numerous negative effects, the depression disorder remains untreated. It is reported in another research conducted by (Reich, 2008) that depression associated with the cancer may lower treatment compliance and raise the chance of relapses.

Some studies have observed that diagnosis of cancer may disturb the mind, and the suppressed emotional worries may be precipitated or somatised as physical illness. The term "somatization" refers to the inclination to express psychological distress through physical symptoms and seek medical attention for them (Lipowski, 1998). Cancer-related somatic symptoms include pain, exhaustion, appetite loss, decreased energy, lethargy, dyspnoea, dizziness, palpitations, and tremors. Radiation and chemotherapy treatments, as well as the psychological distress they cause, may cause somatic symptoms. Patients with cancer may experience "somatoform disorders," which could make treatment compliance and outcomes more difficult. Given that somatic symptoms related to cancer can have cognitive, psychological, and physiological causes, further research in this area is

necessary to comprehend the somatization process in a somatic disease (Chaturvedi, Maguire & Somashekhar, 2006).

A systematic review explores mental health outcomes in breast cancer survivors reported statistically significant increased symptoms of depression, anxiety, neuro-cognitive dysfunction, sleep disturbance, stress- related disorders /PTSD, suicidal tendency, bipolar and obsessive-compulsive disorders. This information in the research emphasises on evidence- based prevention and management strategies (Carreira, et al., 2018).

Research clarifies the pathogenesis of cancer and shows a negative correlation between stress and a low survival rate in cancer patients. A meta-analysis (Krishnadas & Cavanagh, 2012) with 165 studies in it looked into the long-term relationship between stress and cancer and found that, in initially healthy populations, stress-related psychosocial variables are frequently linked to a higher incidence of cancer. According to research findings, a central factor linking depression, distress, pain, and cognitive impairment—a condition known as "chemo fog" in cancer patients—is an inflammatory state caused by stress-related production of the cytokine Interleukin-6.

Four distinct trajectories of psychological distress in cancer survivors who have finished their potentially curative treatment were reported by Lofti-Jam et al., (2019) in a longitudinal study. Phases of chronic distress, delayed distress, recovering, and resilience are the four distinct trajectories of how individuals gradually adapt to hardship, as elucidated by Bonanno's trajectories model, which explains adaptation following bereavement or traumatic experiences. Chronic distress is defined as extreme distress from which an individual is unable to recover. Conversely, in delayed distress, an individual bounces back from a traumatic event fast but then encounters problems or

difficulties later. The initial phase of disruption that eventually fades and returns to normal function is called recovery. The concept of resilience explains how people can tolerate minor setbacks to their social, emotional, and bodily functioning even when they are under stress. A study suggests screening for distress after treatment in addition to a comprehensive assessment of unmet needs, physical symptoms, and coping strategies to identify people who are at risk of experiencing non-resilient trajectories (Bonanno, Westphal & Mancini, 2011).

Research has revealed some psychological aspects of family members, and caregivers have demonstrated how cancer can change partners' and their families' psychological states. It has been rationalized that family members' "shared unhealthy lifestyle" - which has been suggested as the underlying mechanism for the psychological issues in partners of cancer patients—combines with the psychological distress that comes from grieving and providing care for loved ones. Partners of cancer patients additionally face a higher chance of developing depression. The impact of severe diseases on the patient's close associates was demonstrated by the study (Northouse et al., 2012). Numerous interactive pathways exist, such as the possibility that the event will cause stress in the relationship, deprive the partner of emotional, social, and financial support, and affect the partner's behaviour and day-to-day activities. The interdependence between women with breast cancer and their partners was the subject of another study (Dorros et al., 2010). Participants' depression and stress levels were analysed in relation to their partner's health outcomes by fitting a structural equation model of patient-partner interdependence using reciprocal dyadic data. The results revealed a pattern of influence whereby spouses of breast cancer patients with high levels of stress and depression also had lower levels of physical health and well-being. The study's conclusions suggest that focusing only on the cancer patient is insufficient. When addressing the upsetting

situation, the partner should be considered as they are a silent sufferer. A study (Padmaja et al., 2016) was designed to evaluate caregivers' psychological issues and how they affect cancer patients. Depression and anxiety in cancer patients were found to be significantly correlated with psychological states such as somatization, anxiety, distress, and depression in caregivers. These studies unequivocally show that psychological interventions are necessary to address caregiver issues, which would undoubtedly aid in the management of patients' comparable symptoms. In a study, Chae et al. (2019) investigated psychological and physical symptoms in partners of cancer survivors who had expressed high levels of psychological distress. It has been noted that in times of crisis, the capacity for effective communication and life adjustment may help lessen psychological distress in the spouses of cancer survivors. To enhance patients' and their loved ones' quality of life, the psychosocial components of care are vital and a crucial part of comprehensive cancer care (Turner, et al., 2005).

Cancer patients frequently experience psychological discomfort, but this discomfort is frequently ignored. A study addresses the challenges that cancer patients have when trying to communicate their psychological concerns (Ryan, et al., 2005). According to the study, patients might not talk about emotional issues because they think a doctor shouldn't be dealing with their personal issues. They may also attempt to normalize the circumstance or somatise their emotions. Anxiety and depression may be camouflaged with the physical symptoms of cancer and its subsequent treatment. Thus, emotional distress is neither detected no reported. According to the study, to help identify any emotional concerns, it is necessary to use screening tools, respond appropriately to patients' emotional cues, use a patient-centred counselling approach, actively listen, probe with open-ended questions and emotive language. Medical personnel should receive

education and training in these methods in order to enhance the "psychosocial care" provided to cancer patients and their families.

The perception of illness in a person who has been diagnosed with cancer and their family is of prime importance. Lack of medical understanding about the disease ‘cancer’ and the subsequent course of treatment may add to the worry and mental tension among the patient and their family. How the patient and family perceive the illness would have an effect on their psychological states, and may influence treatment compliance and recovery from an illness. Therefore, their cognitive representation of illness needs to be examined.

Perception of Illness

Illness perception is a process experienced differently in each individual, according to their individual needs, knowledge, values, beliefs, and experiences (Kocaman, 2007). The illness perception model states that when people are faced with a disease, coping responses are primarily formed based on physical and psychosocial consequence of disease. These responses reflect emotional reactions and beliefs of an individual regarding the disease (Ashley, 2015).

A study investigated the illness perception ‘clusters’ at the time of diagnosis, which may predict psychological distress among breast cancer patients (Mc Corry, 2013). There is a well-established correlation between psychological distress and illness cognitions. To find a similar profile of illness perception, cluster analysis was used. It was found that one of the clusters was associated with negative thinking both during the six months following the cancer diagnosis and was more likely than the others to experience psychological distress. The study suggested creating psychological interventions to change "illness cognitions" to lessen distress in women with a diagnosis of breast cancer.

Another cross- sectional study (Scerri, 2019) explored illness perception, depression and anxiety in informal carers. By using a common-sense model, it was found that the informal caregivers' perception of illness is a predictor of their anxiety and depression. Therefore, it is important to explore the personal understanding and beliefs of carers/caregivers, as their beliefs relate to their psychological well-being. Thereby suggesting that cognitive -based interventions may be effective in targeting depression in these informal carers.

In a study (Johansson, 2014), the experience of the colorectal cancer survivors' and their partners' perceptions of their illness were compared. The study clarified how survivors and their partners perceive their conditions. Among partners, the most prevalent illness perception concerned accepting the cancer diagnosis, accepting its meaning, and being ready for its long-term effects. On the other hand, a different illness perception that was more common among cancer survivors focused on erasing the cancer diagnosis by downplaying its significance and lessening its influence on the idea of a cancer diagnosis. To meet the goals of person-centred, contemporary cancer care, healthcare professionals must acknowledge that partners' and survivors' perspectives and perceptions of the illness may vary. A study (Wu et al., 2013) investigates the beliefs of patients and their spouses regarding the course of the disease, the control of treatment, and the impact these beliefs have on the patient's quality of life. The research contributed to our understanding of how patient beliefs about a shorter disease course and, consequently, an improved quality of life six months later, are influenced by spouse beliefs that the treatment will control their loved one's illness.

In a study, Margreet (2005) examined whether patients' perceptions of their illnesses could account for any variation in their quality of life after receiving a recent head and neck cancer diagnosis. This study found that the quality-of-life domains of

physical, emotional, cognitive, social functioning, and global health were significantly impacted by perceptions of illness. According to the study's findings, patients who focused more on their symptoms had lower quality of life scores, feared that their conditions would recur, tended to blame themselves, and showed a stronger emotional response to their sickness. Moreover, it is observed that the psychosocial and emotional problems pertaining to cancer may increase with the progression of illness and subsequent side effects of cancer treatments. This may also cause changes in their appearance, often leading to body image dissatisfaction in cancer patients. Thus, body image issues need to be examined closely to have a deeper understanding of related concerns, both from the patient as well as partner's perspective.

Body Image

Body image disturbance is the term used to describe a chronic complaint of unhappiness, worry, and distress about a physical feature that interferes with social interactions, activities, or work performance to some extent, (Cash, 2004). To put it more simply, it's the way that an individual views their own body. Presently, body image is recognized as a multi-dimensional construct, contrary to the earlier research's one-dimensional conception of it. The three dimensions of body images are affect, investment, and evaluation, according to Cash & Fleming's (2002) helpful multidimensional model. The emphasis on one's physical appearance and the work necessary to attain the desired physical appearance is known as body image investment. The emotional experience that results from assessments of one's body is known as body image affect. The assessment of one's body image relates to how satisfied or unsatisfied one is with different aspects of appearance.

According to a cross-sectional descriptive study (Jayarajah & Samarasekera, 2017), patients with stroma who had a difficult time adjusting psychologically to changes in their body image were more likely to be younger in age, as well as those who are over-weight and have temporary stoma (any opening in body formed after cancer treatment, or surgery). The study pointed out that it would be beneficial to identify the patients with risk of poor adaptation before the surgery, and counsel such a patient for necessary care and education before and after surgery, as well as during the follow-up visits.

A key distinction between general dispositional assessments of body image and contextual or state assessments of body image during sexual activity is highlighted in the literature on body image (Yamamiah, Cash & Thompson, 2007). Certain studies have provided evidence in favour of the connections between variables linked to body image, sexual satisfaction, and marital adjustment (Babayan, Saeed & Aminpour, 2018). Sexual satisfaction is positively correlated with appearance evaluation (Holt & Lyness, 2007), general body image (Tang, Lai, & Chung, 1997), general body esteem (Penhollow & Young, 2008), and self-perceived sexual attractiveness, but it is negatively correlated with body shame (Cologero & Thompson, 2009). Dove and Wiederman (2000) cite data from other studies showing that women who feel self-conscious about their bodies when engaging in sexual activity with a partner typically have lower levels of sexual satisfaction. Research (Ackard et al., 2000) indicates that women who report higher levels of body dissatisfaction also report higher levels of sexual avoidance and lower levels of arousal and desire (Reissing et al., 2005; La Rocque & Cioe, 2011). According to Sanchez and Kiefer (2007), they also report less pleasure, orgasm, and sexual satisfaction.

An analysis of Woertman's (2012) research on the topic discusses the connection between female sexual functioning, behaviour and body image. Empirical evidence regarding the relationship between sexuality and body image is presented in a review that

uses data from 57 studies. It shows how issues with body image can affect all facets of sexual functioning. Women's self-consciousness and cognitions are crucial to understanding the complex relationships between their sexuality and body image. Bodily perceptions and evaluations obstruct sexual behaviour, sexual avoidance, and risky sexual behaviour in addition to sexual experiences and reactions during sexual relations.

Young women with breast cancer and their sexual problems are the subject of another study conducted by Fobair et al., (2006). The study raised concerns about things like radiation changing the texture and appearance of the skin, chemotherapy causing sudden menopause, and surgical treatment potentially resulting in disfigurement. Participants in the study with cancer also reported hair loss during chemotherapy, worries about gaining or losing weight, and decreased self-esteem. The study reported that these changes may lead to body image issues and in addition, sexual problems were also reported by substantial proportions of women after being diagnosed with breast cancer. To improve the quality of life for young women diagnosed with breast cancer, the study highlights the importance of addressing issues related to vaginal dryness, body image, poor mental health, and partner difficulty understanding feelings, all of which have been linked to greater sexual problems. An additional investigation into the psychological effects of changes in sexuality, fertility, and body image in young adults with breast cancer and their partners (Miaja, Platas, & Cannon, 2017) found that these important concerns are not given enough attention in the all-encompassing care that these patients receive. When young couples are dealing with breast cancer, it should be encouraged to involve their partners in decision-making to enhance communication and rebuild positive relationships. In the process of sexual renegotiation that follows a cancer diagnosis, a partner's comprehension and acceptance, strong bond, excellent communication, and affection are all helpful (Pinto, 2013). The moderating effect of perceived partner

empathy on depression and body image in breast cancer survivors was assessed by another study (Fang, Chang & Shu, 2015). According to the study, women who experienced body image dissatisfaction following breast cancer surgery may experience fewer depressive symptoms if they feel that their partners are more empathetic.

Relationship and Intimacy in Cancer

Several developmental theorists (Maslow, 1954; Erikson, 1950; Sullivan, 1953) have emphasized the importance of intimacy in the hierarchy of needs. Intimacy is a crucial developmental task during the transition from adolescence to adulthood, according to Erickson (1950). Similar to this, Sullivan (1953) defines "the need of intimacy" as "the need for collaboration with one other person" and links it to various stages of life, starting with adolescence. According to Lowenthal and Weiss's (1976) theory, most men and women can only find the drive and vitality to lead independent, self-generating, and fulfilling lives when they are in one or more close, mutually supporting dyadic relationships.

The significance of approaching cancer from a relationship perspective was emphasized by Manne and Badr (2010). According to this viewpoint, a married couple's relationship is a shared resource for both parties. It emphasizes the significance of maintaining and improving relationships through communication efforts during difficult times. The marriage bond serves as a resource for people to turn to for support during trying times in life, according to theories like the cognitive-social processing theory, the equity theory, and the theories of social support. These theories are derived from the family systems theory and communication theory, which were studied by Jackson (1968), Jackson & Weakland (1961), and Haley (1963), respectively.

According to Olson (1981), who distinguishes between intimate experiences and intimate relationships, intimacy is defined conceptually as a bond that endures over time and in which the parties share intimate experiences in multiple domains. Olson also emphasizes the "process" aspects of intimacy. Olson (1975) identified seven categories of intimacy: emotional, defined as the feeling of being close to someone; social, defined as the experience of sharing friends and social networks; sexual, defined as the sharing of affection and/or sexual activity; intellectual, defined as the sharing of ideas; recreational, defined as the sharing of interests in hobbies; spiritual, defined as the sharing of a common life purpose and/or religious faiths; and aesthetic, defined as the closeness resulting from sharing and appreciating beauty.

Not only is a cancer diagnosis and treatment upsetting for the individual receiving it, but also for their intimate partner. The family members, especially the romantic partner with whom the patient shares life experiences is not only the silent sufferer, but also the supporter in the journey of cancer. A growing body of research in psycho-oncology supports the validity and usefulness of certain models, which explain how couples' emotional reactions and coping mechanisms interact. Examples of these models include the relationship intimacy model and the transactional model of stress and coping (Regan, 2015). According to this study, reactions within the couple that prevent the patient and partner from communicating openly may have a negative effect on the psychosocial results.

A significant factor in determining how well a patient and their partner psychologically adjust to cancer is the closeness and intimacy of their marriage. The development of the relationship intimacy model of couples' psychosocial adaptation to cancer was made by Manne & Badr (2008). According to the model, communication and behaviours between patients and their partners should either increase or decrease the

degree of intimacy and closeness. A study (Sara, 2020) looking at the relationship intimacy model's validity describes relationship-compromising behaviours in the context of couples coping with cancer, such as avoidance, criticism, and pressure with drawl communication. According to the relationship intimacy model, avoidance is the act of not discussing worries about cancer with a partner; criticism is an unwelcoming response to a partner's attempt at coping; and pressure withdrawal is defined as the partner withdrawing from conversations about cancer. This may have a detrimental impact on intimacy, which may then harm the psychological adjustment of couples to cancer and the satisfaction of their relationship. Conversely, relationship-enhancing behaviours include mutual self-disclosure, responsiveness from partners, and relationship engagement, all of which enhance couple cohesion and communication. Reciprocal self-disclosure means when partners engage in disclosing feelings to one another; partner responsiveness is when patient feels understood and accepted by the partner; and the perception that your partner sees cancer from a relational perspective is explained by relationship engagement. As a result, a couple's intimacy increases and their psychological adjustment to cancer improves.

There is a link found between marital relationship/intimacy and couple’s Quality of life. According to Gilbert's (2010) research, cancer can cause profound changes in one's sexuality, intimate relationship dynamics, and sexual functioning, which can have a substantial impact on one's quality of life and mental health. But research on sexuality and intimacy in relation to cancer finds that intimate partner experiences are often overlooked. The study highlights how important it is to investigate ways to improve intimacy, quality of life, and couple relationships using a qualitative approach.

Quality of life

According to Dow and Melancon (1997), a patient's perspective on life, fulfilment, and enjoyment of it are all considered to be synonymous with their quality of life. Ferrell et al. (1995) presented a model of life quality based on the World Health Organization's broad definition of absolute well-being, which includes states that are physical, psychological, social, and spiritual. and cancer patients may experience negative effects in these areas of their lives. According to the study, symptoms of cancer, such as nausea, vomiting, exhaustion, insomnia, and severe anxiety and fear, as well as treatments like radiation, chemotherapy, surgery, and hormonal medications, can all negatively impact one's physical and mental well-being. Uncertainties about the future combined with problems at work and home could destroy someone's social and spiritual well-being.

In a research note (Chaturvedi, 1991), it was discussed what matters to Indians' quality of life in relation to cancer. Approximately fifty subjects were questioned to identify the factors that they felt were important and reflected quality of life. The findings indicate that an individual's functioning and degree of physical and psychological well-being were less significant. Conversely, nearly two-thirds of the subjects valued social satisfaction, spiritual fulfilment, and mental tranquillity highly. According to the research findings, the degree of satisfaction was deemed more significant than the level of functioning in this specific study conducted in India.

In an investigation into the quality of life of partners of patients with various cancer diagnoses, Bergelt, Koch, and Petersen (2008) looked at potential predictors of partner quality of life. The study revealed that various factors, including social demographics like age, gender, and income, psychosocial factors like social support, partner relationship quality, and patients' overall quality of life; and clinical variables like

cancer stage and length of time since diagnosis and treatment, could potentially predict partners' quality of life. The findings clarify why, according to the sexual functioning scales, male partners reported a higher quality of life than female partners. When compared to the general population, partners—male and female—reported much worse mental health. Relationship quality was found to be a strong predictor of mental well-being in spouses of patients with breast and gastrointestinal cancers. Greater mental well-being of the patient also predicted better physical and mental well-being in partners of breast cancer patients; however, none of the model's variables had any predictive value for partners of male reproductive cancer patients. According to the study, partners' quality of life was compromised on a mental (psychological) rather than a physical level. Remarkably, neither partners' mental nor physical quality of life was impacted by the patient's clinical characteristics. While breast cancer survivors experience more menopausal symptoms and physical symptoms more frequently than healthy women, their reported sexual functioning and health-related quality of life are comparable to those of healthy women, according to a study (Ganz & Rowland, 1998) that examined the partner relationship, body image issues, and sexual functioning in breast cancer survivors. According to the study, surgical treatment that preserves breast tissue should have less of an adverse effect on a patient's quality of life and ability to reproduce sexually than mastectomy. For individuals who present with any complaints or concerns, counselling and symptomatic management are recommended.

Partners of breast cancer survivors may also experience the negative consequences of their spouse's illness years following treatment. Since younger survivors face more difficulties than their older counterparts, a study (Cohee, et al., 2018) compared quality of life in partners of younger breast cancer survivors with the partners of older survivors of breast cancer. The results shows that predictors of quality of life differ between these

partner groups. Improved physical function, reduced depressive symptoms, increased marital and parenting satisfaction, and having more personal resources were all associated with a higher overall quality of life for partners of younger survivor groups. Conversely, for partners of older cancer survivors, higher parenting satisfaction, greater spirituality, fewer depressive symptoms, and increased social support from the spouse who survived breast cancer were all associated with improved overall quality of life. The research findings verified that partners of elderly breast cancer survivors had expressed a higher quality of life in comparison to partners of younger survivors.

A study (Reis et al., 2010) looks at the Quality-of-life levels of gynaecological cancer survivors to determine the issues that impact their sexual health, quality of life, and sexual functioning. The quantitative findings of the study showed that a person's physical, psychological, social, and spiritual quality of life is adversely affected by cancer and its treatments. Through qualitative analysis, important conclusions about sexual health - a vital and necessary aspect of quality of life - were drawn. The analysis of the semi-structured interviews revealed that the negative impacts on four important aspects of sexual health - body image, gender role, sexual functioning, and reproductive ability - make women's sexual health and functioning complex and difficult. It is observed that surgical and radiation treatment may cause body dissatisfaction, low self-esteem and negative sexual experience with the partner. The study emphasises on the need of educating, and informing the sexual changes that may appear in gynaecological cancer patients, and throughout the course of treatment and follow-up sessions, offer supportive care in relation to aspects of sexual functioning and quality of life.

Sexual Health in Cancer

In contemporary times, cancer is now viewed as a chronic illness rather than a fatal one, and there has been a change in focus towards issues related to quality of life, with ‘sexuality’ emerging as a key component (Graziottin,2001). Sexuality, a person’s ‘self-schema’ is an individualised view of themselves as a sexual being, encompassing biological, psychological, behavioural as well as interpersonal domains. The diagnosis of cancer followed by series of treatments may alter physiological functioning, psychological states, body image, that may profoundly have an effect on intimacy and sexuality.

Significant alterations in sexuality, sexual functioning, relationships, and "sense of self" can be brought about by cancer. Several factors may influence one’s health after being diagnosed with cancer. Demographic characteristics such as age, gender, education, socio-economic, and relationship status, as well as type of cancer and treatments are evaluated to have a deeper knowledge about the sexual adjustment after cancer; and the following observations are made. At the onset, examining the general health condition, it is observed that the disease burden of cancer may increase with older age, comorbidities such as diabetes, hypertension, or complications owing to other systemic diseases. Secondly, lack of medical awareness about cancer may lead to myths and misconception about cancer. People assume that cancer can spread from one person to another by having a close contact, therefore the intimacy between couple is generally prohibited and this in turn negatively impact the couple relationship and quality of life. Although the relationship factors like cohesion, communication and cooperation between the partners have a significant influence on sexual functioning, relationship dynamics and sexual adjustment following a cancer diagnosis have not been given enough attention.

Research on sexual difficulties after cancer has previously been conducted, with a primary focus on the adverse effects of cancer treatment. such as chemotherapy, radiation or surgical complications. A study on female reproductive cancer (Krychman & Millheiser, 2013) reported that cancer treatment may cause anatomical changes such as reduced elasticity and vaginal stenosis, stoma or fistula formation. Another study (Iżycki, Woźniak & Iżycka, 2016) reported that these changes may lead to physical or physiological changes such as loss of libido, dryness of vagina, dyspareunia (pain during intercourse), post coital bleeding or infertility. Studies on men's sexuality after cancer have focused on testicular and prostate cancer (Trama et al., 2015), where hormone therapy is referred to as "chemical castration." Weight gain, reduced genital size, erectile dysfunction, and physical feminization, loss of sexual desire and orgasmic sensation, as well as bowel or urinary incontinence are commonly reported. Rectal cancers may also present sexual concerns, both in men and women. Any complications in surgery may lead to sexual and fertility concerns, adding up the ‘disease burden’ and reducing the ‘quality of life’ in cancer patients.

One known long-term adverse effect of cancer and its treatments is changes to sexual well-being. The sexual changes can adversely affect psychological wellbeing quality of life and couple relationships. A study conducted by Perz, Ussher & Gilbert (2014) examines the intricate relationship that exists between sexual function and psychosocial factors in the context of cancer, such as psychological well-being, life satisfaction, relationship satisfaction, and communication. For both men and women with cancer diagnoses, as well as for the male study partners, physical quality of life was found to be a predictor. On the other hand, depression and mental health were found to be predictive factors for cancer-stricken women. Dyadic sexual communication was predictive of both male and female partners and cancer-stricken women. The results

suggest that rather than focusing exclusively on individuals with cancers of the reproductive system, interventions aimed at addressing sexual difficulties and fostering sexual renegotiation should be made available to men and women who have been diagnosed with cancers other than sexual cancers. The aforementioned study points to the significance of involving cancer patients' partners in interventions designed to enhance and support sexual functioning by promoting physical well-being, sexual communication, and psychological stability.

A research study conducted by Marshall and Kiemle (2005) examines how breast reconstruction following cancer treatment affects patients' and partners' sexual functioning. The data was analysed using grounded theory methodology, and key categories for partners and patients were found. Anxiety and worry, influencing factors, self-image, and sexual changes were among the patients' main categories. While partners' primary categories of influencing factors for negotiating sexual changes included stress and anxiety. It was revealed that every woman goes through periods of sexual transition and anxiety, and some patients expressed that they had lost their sense of their "sexual identity." While most partners stated that partner survival was their top sexual concern, most men also admit to having some level of sexual anxiety. The study points to a dearth of knowledge and open communication regarding sexual issues between the couples, and points the need to include partners throughout the treatment and recovery phase.

The topic of sexual functioning in breast cancer survivors who are having problems with their body image is covered by Boquiren et al. (2016). There were significant correlations observed between the Female Sexual Function Index (FSFI), orgasm satisfaction, and overall SF and the body stigma subscale. Vaginal dryness, relationship satisfaction, and body shame were found to be significant predictors of

sexual functioning. A population-based study compared the sexual activity function and concerns of cancer survivors with those of cancer-free controls, according to Jackson et al. (2016). According to the study, after receiving a diagnosis and course of treatment, both men and women with cancer reported feeling less satisfied with their sexual functioning. Additionally, women with cancer expressed more concern about their levels of sexual desire. It was also noted that women who have had cancer for five years are more likely to report having trouble becoming aroused. Previous research (Zebrack, et al., 2010) reported that sexual difficulties and reproductive concerns have been reported by adult survivors of childhood cancers, spanning a variety of cancer types and treatments. It is not only the reproductive cancers, but also non-reproductive cancers such as colon, urinary bladder, head and neck, lymphatic and lung cancer patients reported to have experienced diminished sexual interest activity, low self-esteem, negative body image or feelings of unattractiveness, loss of femininity or masculinity, and alterations to the 'sexual self'. Rhoten (2016) observed that head and neck cancer not only cause functional difficulties in speaking, swallowing, tasting or breathing, but also impaired sexual functioning due to the associated disturbances in body image and psychological states.

An older study (Grifith & Trieschmann, 1983) differentiated between primary and secondary causes of sexual dysfunction, explaining primary factors comprises of systemic changes due to cancer and related treatment, and presents physical or physiological symptoms whereas, the secondary factors are psychosocial that may disrupt physical integrity, body image, sense of attractiveness, self- esteem, sexuality and intimacy. The study reported that cancer patient experiences reduce sense of control, self-efficacy and impaired self -esteem, hopelessness, worthlessness, fear of rejection or abandonment, fear of recurrence, reduced energy, altered body image, guilt and performance anxiety. These psychological symptoms can negatively impact libido and sexual functioning.

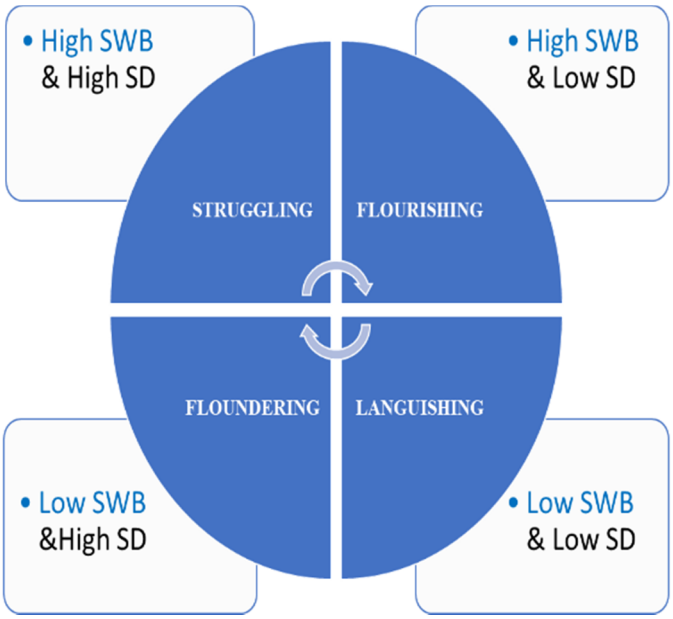
Sexual Health Models

The relationship and dependence of biological, psychological, and social factors influencing sexual health after cancer are explained by the biopsychosocial conceptualization of sexuality after cancer by Mercadante et al., 2010, Reese, (2011), and Sadovsky et al., 2010. The physical changes in post-cancer sexuality that are caused by biological factors include sterility, low libido or sex drive, painful sexual relations, early menopause, and erectile dysfunction. Low desire, erectile dysfunction, and lower sexual self-esteem can result from psychological factors like distress, changes in body image, low mood, and anxiety. These factors are common. Social variables play a crucial role in determining sexuality and intimacy in couples coping with the effects of cancer because partners share many intimate and sexual behaviours; Pre-treatment relationship satisfaction, intimacy, open communication, and mutual support are all included here.

The approach to sexual assessment and intervention, which includes open-ended questions about sexuality, is outlined in PLISSIT MODEL, which is a proposed conceptual scheme for the behavioural treatment of sexual problems (Annon, 1976). The term PLISSIT is the acronym for permission, limited information, specific suggestion, and intensive therapy is PLISSIT. Early implementation of the PLISSIT model helps initiate the process of sexual function restoration and prepare patients for the anticipated sexual effects.

Cancer survivors face substantial obstacles to their sexual health and well-being, according to the Sexual Health Model (Keyes & Lopez, 2002). The term "sexual dysfunction" (SD) refers to the limitation of performance and is associated with the sexual response cycle, while "sexual well-being" (SWB) focuses on the somatic, emotional, intellectual, and social aspects of sexual being. The levels of sexual well-being

and sexual dysfunction are shown in four quadrants, namely *'Struggling'* (High SWB, High SD), *'Floundering'* (Low SWB, High SD), *'Languishing'* (Low SWB, Low SD), and *'Flourishing'* (High SWB, Low SD).



Sexual Health Model (Keyes & Lopez, 2002)

The link between psychological and physiological functioning can be interpreted with the existing models of Sexual health. The physiology of sexual response is divided into four phases by Masters and Johnson (1996), whose work forms the basis for medical understanding of sexuality. These phases are arousal, plateau, climax, and resolution. Kaplan simplified and added the three phases of this model—desire, arousal, and orgasm (1995). A circular model was developed by Basson (2015) to define female sexual function. By situating the physiological parameters of Kaplan within the context of psychosocial needs, this model clarified how, specifically, emotional intimacy acts as a stimulant for sexual activity. In order to develop a more thorough model of the "female sexual function index," Basson considered the intricacy of psychology and biology. According to Sands & Fisher (2007), there is a strong correlation between women's

sexual function in the modern era and Basson's model. In summary, emotional intimacy is a driving force behind sexual activity, and the physiological parameter of the Kaplan model was contextualised within the framework of psychosocial needs. Thus, Sexual health is a means of improving other aspects of life.

Psychological distress and sexual dysfunctions are observed as concomitant symptoms of cancer. A systematic review by Carreira et al., 2018 describes on adverse mental health outcomes in breast cancer survivors. It is observed that there is a statistically significant increased symptoms like frequency of depression, anxiety, neuro and cognitive impairment, suicidal tendency and sexual difficulties when compared with women having no history of cancer. Similarly, a study (Twitchell, 2019) revealed how male reproductive cancer patients' sexual dysfunction has a detrimental effect on their sense of their worth and how they perceive their bodies and that it can also lead to mental health problems like depression and anxiety. Research has shown that higher levels of sexual functioning and satisfaction with sex are correlated with the quality of a couple's relationship (Perz, et al., 2014; Van den Brink, 2018). After examining data on sexual satisfaction among long-term cancer survivors five to ten years after diagnosis, Heyne et al. (2011) conducted additional research in which they identified factors that either positively or negatively affect survivors' sexual satisfaction, such as social support or the burden of psychosocial and physical symptoms respectively. According to the study, almost 50% of the participants felt that their sexual lives were less fulfilling than they were before cancer. It is observed that high sexual satisfaction was associated with a low chronic comorbidities index, less fatigue, nausea or vomiting, less pain and low depression, anxiety and a higher level of social support and a higher level of satisfaction with the relationship and quality of life.

A comprehensive review that addresses the biopsychosocial treatment options available to female patients as well as a detailed discussion of sexual health issues following cancer treatment is provided (Sears, Robinson, Walker, 2018). The authors critically review research published between 1990 and 2016 and look into the sexual health concerns of women with cancer, regardless of the type or stage of the disease. They also discuss the psychosocial and biological interventions that are currently available for the side effects related to sexual health, such as dyspareunia, vulvar-vaginal atrophy, and vaginal dryness. A cross-sectional study on gynaecological cancer found no significant correlation between sexual function and distress, although the majority of studies have reported distress linked to sexual dysfunction (Thranov & Klee, 1994). To comprehend the potential roles that socio-cultural factors may play, a thorough analysis is required. There a need for in depth analysis to have an understanding about socio-cultural factors that may play an important role, and replicate the studies, analyse and interpret the observation and results.

Indian Studies

Globally, breast cancer incidence has increased over the past ten years, with Asian nations experiencing the most significant increases (Green & Raina, 2008). According to a study (Ferlay et al., 2012), there were over 1,000,000 new cancer cases identified in India in 2012, and 680,000 cancer-related deaths were reported. According to Shukla et al. (2009), 27% of all cervical cancer cases worldwide are reported to have originated in India. Even though many women in India survive gynaecological cancers, it is noted that due to cultural barriers, sexual dysfunction remains unexplored. According to research by Basu et al. (2009), 70% of cervical cancers are discovered at stage 3 or later, which raises the death rate. In India, where cultural and ethical boundaries are closely maintained, talking about sex and related subjects is still frowned upon. According to Shankar et al.

(2017), female sexual dysfunction following cancer treatment is still an unresolved problem. In the Indian subcontinent, sexual dysfunction is not routinely screened for or treated, even though patients with it face challenges and distress. Researchers have not paid much attention to the effects of cancer and its treatment on sexual health in the Indian context, where people do not open up to discuss the sexual concerns.

Ghosh et al. (2020) conducted a community study in southern India that examines women from tribal populations' knowledge, attitudes, and screening practices regarding cervical cancer and its diagnosis. By using a semi-structured questionnaire, the study assessed participants' knowledge, attitudes, and screening practices for cervical cancer. One possible explanation for the rising cancer incidence is a lack of knowledge. Research revealed that although 83% of participants were aware of cervical cancer, only 51% of women were aware that it could be prevented, and only 2.3% were aware that early detection works. None of them had been screened for cervical cancer prior to this study. The study shows statistical significance with respect to the knowledge scores and the participants' age group, marital status, educational attainment, socioeconomic status, and tribal community. The study's subjects have demonstrated a positive attitude toward cancer screening and acceptance of cancer education. To learn more about the current obstacles to cervical cancer screening among the tribal women in this area, more qualitative research is advised.

In the Indian context, another study by Barthakur et al. (2017) concentrated on qualitative data pertaining to problems associated with sexuality and body image in breast cancer survivors. In body image, emerging themes were about impact of surgery, clothing, hair loss, sexuality, identity (womanhood, motherhood and sense of attractiveness), and uncomfortable situations. In contrast, concerns regarding age, the role of spouses, and treatment-related sexual difficulties were discussed in relation to

sexuality. The findings of the research point out the need to address the body image issues and sexual concerns, as it negatively impacted the quality of life of cancer survivors.

A cross-sectional study was carried out by Reichheld, Mukherjee, and Rahman (2020) to find out how much knowledge 175 women in an urban South Indian community had about HPV vaccinations and cervical cancer screening. The study's main focus was on women between the ages of 25 and 65 and the prevalence of cervical cancer screening and awareness. Only 7.1% of respondents had received a cervical cancer screening, and 14.3% had had at least one pelvic exam in their lifetime. Screening was more common among married women, non-Hindu women, and women from higher socioeconomic classes than among single or unmarried women. 84.6% of women said they knew very little about cervical cancer, 10.3% said they knew somewhat, and 5.1% said they knew a lot about it. According to the study, a lack of awareness about cancer is one of the many factors that may affect women's capacity and willingness to participate in cancer screening. Preventive services such as screening are not prioritized for low-income individuals who are asymptomatic and dealing with more serious day-to-day issues (Aswathy, et al., 2012). Another obstacle that prevents women from taking advantage of this preventative service is a lack of transportation, which can result in lengthy wait times to see a healthcare provider and screening costs. Consequently, it is highly advised to raise awareness through community-based education initiatives to increase the prevalence of cervix cancer screening in this study. Another study, which focuses on the post-cancerous stage of life, looks at the quality of life and sexual function in Indian women who have survived long-term uterine cervix carcinoma (Shankar, 2014). The study sheds light on the stages of sexual response and the possible interactions between the physical and psychological strain of receiving a cancer diagnosis and treatment.

Stressing the importance of evaluating various aspects of emotional, physical, and other co-morbid conditions as well as drug history to ascertain the aetiology of female sexual dysfunction, overall sexual health assessment is crucial. Further investigation is required into sexual history, cultural concerns, and religious beliefs that may impact sexual functioning following a cancer diagnosis. Emotional disorders like depression and anxiety have been shown to decrease arousal, orgasm, and sexual desire (Krychman, et al., 2006). Depending on the age of the children, cancer patients may experience particular psychological problems like worry about spouses and children, fear of recurrence, or both. Self-blame or the belief that past actions or transgressions contributed to the cancer's development can add to the patient's burden and suffering (Klass,1990). Additionally, cancer care and treatment may exacerbate relationship problems. For instance, it could be difficult for a partner to cope with the stress of a loved one's illness and to move past the psychological and physical changes the survivor has gone through. The partner must be present for the sexual dysfunction screening and counselling. Psychoeducation and open communication are encouraged, and referral to a suitable therapist may be required, in accordance with the criteria for couples dealing with "sexual distress" in cancer.

Previous research reported few segregated studies on psychological problems, illness perception, body image issues and quality of life with respect to cancer, and some studies viewed on the aspects of intimacy and sexuality in cancer; but no studies seemed to have looked into the relational aspect and dynamics of these variables. There is a specific need to study the affective, cognitive and conative component, along with the social components to gain a deeper comprehension of the ways in which these factors - which affect cancer patients' quality of life and sexual health - interact with one another and with one another. The partner or spouse is an integral and

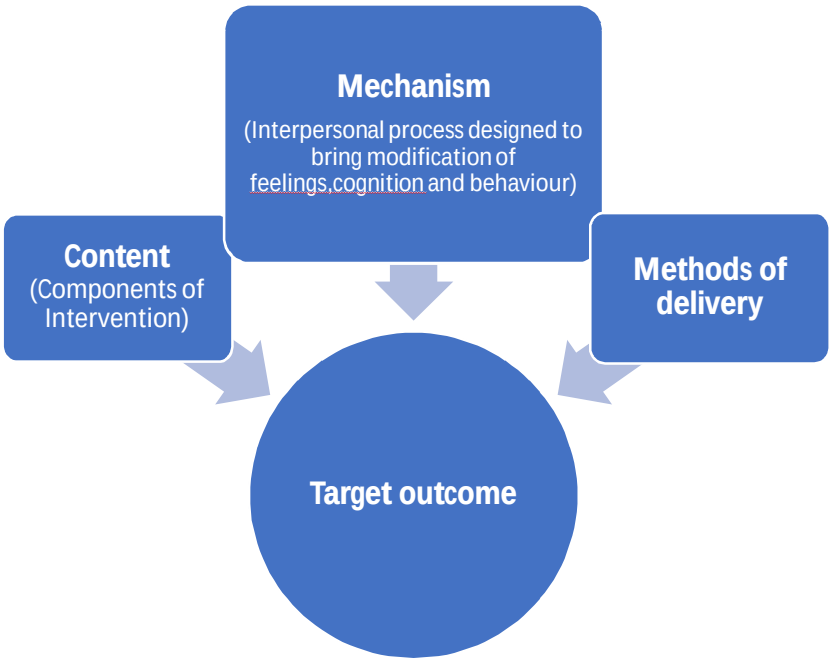
indispensable person, sailing together with the patient in the journey of cancer, hence the psychosocial aspects of partner should be studied with the same importance as that of patient diagnosed with cancer. Because of the psychophysiological and emotional aspects of cancer and cancer treatment, there is a special need for psychological, behavioural, and rehabilitative issues in cancer care. The literature review indicates that developing evidence-based interventions with a particular focus on improving the psychological and sexual health of cancer patients and their partners is critically needed.

Role of an Intervention

A psychological intervention is any therapeutic approach intended to help a person better adapt to a particular circumstance and, in doing so, maximize one's own resources with regard to autonomy (independence), self-knowledge (awareness), and self-improvement (adaptation).

A metareview was carried out by Hodges et al., (2011) comprising narrative and systematic reviews and a meta-analysis of interventions categorized as "psychological." It was found that the reviews of "psychological interventions" in cancer care that have been published to date have not provided conclusive answers to the questions of how treatment is chosen, what kind of treatment is best, and by whom for a given patient with that particular problem in a given situation. The suggested mechanism consists of an interpersonal procedure intended to modify emotions, thoughts, attitudes, and behaviours (e.g., change in belief). Through a comprehensive analysis of the term "psychological," one can distinguish the most efficacious forms of treatment and subsequently make more persuasive arguments regarding them in the context of clinical practice.

Role of Psychological Intervention (Meta review-Hodges, et al., 2011)



According to the review of research on the subject, four treatment domains - content, suggested mechanism, delivery methods, and target outcome seem to help classify psychological interventions. The term "content" describes the specific elements of an intervention, such as instruction, counselling, social support, or the methods used (such as breathing exercises, relaxation, or skill development). The suggested mechanism consists of a social process intended to alter thoughts, feelings, behaviours, and attitudes (e.g., change in belief). The mechanism of action will be unknown for many interventions, but it is known or at least strongly hypothesised for some (interventions to reduce distress). Delivery techniques can include minimal contact with the therapist (e.g., expressive writing) or an exchange with another person (e.g., connection with a therapist in psychotherapy). Last but not least, the term "target outcome" describes the aspects of which the intervention is intended to produce an improvement (e.g., to help people with cancer).

Another study analyses psychological, behavioural, and immune changes after a psychological intervention (Andersen et al., 2004). The clinical trial observed 227 women post breast cancer surgery, who were assessed for emotional distress, social adjustments and health behaviours. and were given intervention, weekly one session for a four-month duration. Strategies for stress reduction, mood enhancement, changing health-related behaviours, and preserving adherence to cancer treatment and care were covered in the session. Significant reductions in anxiety, enhancements in perceived social support, and better eating habits were observed after an immune assay and re-evaluation. Along with the improvements observed in the behavioural and psychological domains, the intervention patients' immune responses also improved. Following the psychological intervention sessions, the study demonstrated a convergence of noteworthy effects on cancer patients' biological, health-related behaviours, and psychological well-being.

A study conducted on endometrial cancer patients by Philip, et al (2012) focused on interventions targeting on sexual and marital relationships, and found that sexual functioning gets better with improvement in quality of life and couple-relationship, and is negatively correlated with body image and fear of sex. Similarly, a nine weeks psychosocial intervention for prostate cancer patients (CONNECT) focused on symptom management, mainly sexual dysfunction, managing uncertainty, improving communication and positive thinking. A Psycho-educational program (Fex-Can) for 12 weeks (Wiklander et al., 2019), comprises of modules addressing sexual dysfunction, and fertility related distress, anxiety, depression, body image issues and improving Health-related Quality of life in younger adult cancer patients.

The most extensively researched aspect of the cancer literature is social relationships, which are found to improve quality of life (Manne & Badr, 2010). A "significant other" is a spouse or romantic partner in these relationships. Couple-based

interventions that improve partner and patient quality of life are crucial, according to a meta-analysis and systematic review of psychosocial interventions for couples coping with cancer (Badr & Krebs, 2013). Since cancer patients view their partners as the most significant source of support, the patient-partner relationship is seen as critical. Every element of a patient's and partner's quality of life may be impacted by a cancer diagnosis and course of treatment. Partners learn to adapt and offer crucial and emotional support to their partners during times of extreme stress as individuals try to manage their role shifts and distress due to physical side effects and increased functional disability as a result of cancer treatment. Depending on the challenges and problems that the couples are currently facing, couple interventions can be implemented in various ways. For instance, if a couple is unhappy, the treatment should concentrate on making the relationship better or on providing the right interventions to get cancer patients and their partners ready for the psychological and medical obstacles they will face. providing skill training to create a supportive environment where the couples can freely discuss and address their concerns together, as well as educating them on how to manage side effects related to cancer and treatment. Couple-based interventions may also have a major impact on managing side effects (like pain), coping, and caregiver burden, according to other published reviews in the chronic illness and caregiving literatures (Martire et al., 2010; Northouse et al., 2010).

Although, there has been ongoing research about cancer and sexuality in the western world, very few studies are reported in the Indian context. In India, sexual functioning is looked as an art and science and a sacred act between consenting partners, yet discussing sex is a taboo, and never ever discussed openly. Destigmatising the need for communication among couples about sexual functioning and related concerns, and overcome the psychological barriers and address the issues are essential. There is a specific need to conduct Indian studies which are culturally sensitive and specific to the

context, and subjected to an in-depth exploration to have a deeper understanding about the psychosocial factors influencing sexual health among cancer patients, along with their partner.

Rationale

Cancer treatments have the potential to harm sexuality, which is fundamental to the human experience. Since patients diagnosed with cancer are the most at risk to sexual concerns, with the known medical causes that are of physiological origin, there is a need to emphasize underlying psychological and social factors, their interaction and interdependence which in turn may largely influence the level of sexual health. While some of the dimensions such as psychological problems, body image, relationship, and quality of life have been studied separately, analysing the relationship between them and their impact on sexual health among patients diagnosed with cancer along with their partner is not done. In the present Indian context of a growing community of younger patients and cancer survivors, this study is unique, analysing psychosocial correlates of sexual health with an attempt to develop a suitable health psychology intervention based on the findings of the research. Thus, with the detailing of research advancements in the field of psycho-oncology pertaining to cancer and sexuality, reviewing the existing body of literature and identifying the research gap pertaining to sparsity of research reported on cancer and sexual health from a psychological perspective in India, the following research objectives and hypothesis are formulated for the present study.

Research Questions

The following are the research questions that the study attempts to answer. **1.** Is there any relationship between psychological states, illness perception, body

image, dimensions of the relationship, quality of life, and sexual functioning among the patients diagnosed with cancer and their partners?

2.What is the effect of a developed psychosocial intervention package on psychological states, illness perception, body image, dimensions of the relationship, sexual functioning and quality of life among the patients diagnosed with cancer and their partners?

Objectives

The following Objectives are formulated for the research.

1. To examine the psychological states, perceptions of illness, body image, relationship dimensions, quality of life, and sexual functioning of the patients diagnosed with cancer and their partners using standardized psychological instruments.

2. To study the relationship between psychological states. body image, Illness perception, dimension of relationship, quality of life and sexual functioning among the patients diagnosed with cancer and their partners.

3. To develop a suitable psychosocial intervention as a package, based upon the assessment of Phase 1 involving exploration of psychological states, illness perception, body image, dimensions of the relationship, quality of life and sexual functioning among the patients diagnosed with cancer and their partners.

4.To administer the developed intervention package along with the medical intervention as a complementary approach on a small sample of patients diagnosed with cancer and their partners.

5.To assess the post-intervention effect on psychological states, illness perception, body image, dimensions of the relationship, quality of life, and sexual functioning on a small sample of patients diagnosed with cancer and their partners.

Hypotheses

The following Hypotheses are made for the study.

1. There would be difference in the levels of psychological states, illness perception, body image, dimensions of the relationship, sexual functioning and quality of life among patients diagnosed with cancer and their partners.

2.There would be a relationship between psychological states, illness perception, body image, dimensions of the relationship, sexual functioning and quality of life among patients diagnosed with cancer and their partners.

3.The developed psychosocial intervention package has a positive impact on psychological states, illness perception, body image, dimensions of relationships, sexual functioning and quality of life among patients diagnosed with cancer.

4.The developed psychosocial intervention package has a positive effect on psychological states, illness perception, body image, dimensions of the relationship, quality of life and sexual functioning among partners of patients diagnosed with cancer.

CHAPTER- III

METHOD

This chapter outlines the research methods, including the design and plan, participant descriptions, measures (psychological instruments), and the steps to carry out the study. The Institutional Ethics Committee (UH/IEC/2021/26) of the University of Hyderabad approved all study procedures and measures.

Plan and Design

Research Design – Using a mixed-method approach, the study investigates the psycho-social determinants of sexual health in individuals with cancer and their partners. It utilizes a range of standardized measures to explore psychological distress, body image, illness perception, intimacy in relationship, quality of life, and sexual functioning among patients diagnosed with cancer along with their partners. The study uses an experimental research design to measure the effectiveness of developed intervention on cancer patients and their partners.

The research was conducted in 3 phases:

Phase I: The Regional Cancer Centre, Government and Corporate Cancer Hospitals with an out-patient as well as in-patient unit were approached, where all the cancer treatments and follow ups are provided. The patients diagnosed with solid tumours (carcinoma), and their partners were approached for their participation in the present study. Both male and female (cancer patient and their partner), with in the age group of 18 years to 65 years are included in the study.

Survey method was used to assess a) psychological states, b) illness perception, c) body image, d) dimensions of the relationship, e) quality of life, and f) sexual functioning

of cancer patients. Assessment was also done with the partners of cancer patients to understand their levels of a) psychological states, b) partner's perception of illness perception of patient, c) partner's perception of body image perception of patient, d) intimacy in relationship, e) quality of life, and f) sexual functioning.

Phase II: An appropriate intervention was developed to enhance the psychological states, perceptions of illness, body image, intimacy in relationships, quality of life, and sexual functioning of cancer patients and their partners. This intervention was developed based on the data collected during the first phase of the study. The developed psychosocial intervention package was given once a week for six weeks to a sample of 20 cancer patients and their partners in the second phase of the study as a complementary approach to the medical intervention.The intervention plan included psychoeducation modules that aimed to correct the myths and misconceptions about cancer by providing authentic information from medical professionals (oncologists), psycho-therapeutic healing through Yoga Nidra (indigenous relaxation method), and couple training and activities (for enhancing relationship).

Phase III- The third and last phase of the study focused on evaluating the psychosocial intervention's efficacy on a limited subset of cancer patients and their partners. The process started with a pre-assessment, followed by three sets of interventions (Psychoeducation, Yoga Nidra, and Couple activities), carried out at a rate of one session per week for six weeks, and concluded with a post-intervention assessment. Experimental research design was used for the intervention study in the third phase, with an experiment group and control group (both the groups inclusive of cancer patients and partners).

Participants

Patients diagnosed with solid tumours (carcinoma) were among the study participants that included both male and female participants, with cases of breast cancer, reproductive cancer, head and neck cancer, gastro-intestinal cancer, renal carcinoma and sarcoma.

Sampling

Sampling procedure followed was non-random sampling, specifically convenience sampling was done. The participants were selected from Government and Corporate Cancer hospitals from Hyderabad, Telangana. Sample for the Phase I study consisted of 115 couples (230 subjects), and Phase 3 included 20 couples in the experimental group and 22 couples in the control group (a total of 84 subjects).

Inclusion criteria (Patient)

Patients, both male and female of 21 to 65 years age group who are diagnosed with solid tumours (Carcinoma and Sarcoma), and between age group 21 to 65 years, married, or having a partner, and Cancer patients of stages 1, 2, 3 with ECOGPS up to Grade2 were included in the study.

Exclusion criteria (Patient)

Patients with advanced cancer, surgical complications, and metastasis were excluded. Patients with Stage 4, ECOGPS beyond Grade 2, Leukaemia & Lymphoma (cancer of blood), Myeloma (cancer of bone marrow), and Brain tumours are excluded. The study did not include individuals with a history of any psychiatric illness such as schizophrenia, paranoid disorder, or bipolar mood disorder.

Inclusion criteria (Partner)

Spouse who is in relationship with the cancer patient, above 18 years of age.

Exclusion criteria (Partner)

Spouse or partner, who is diagnosed with major illness, and currently undergoing medical procedures, above 70 years or known with a history of psychiatric illness are excluded from the study.

Informed consent

The patient diagnosed with cancer and their partner were asked for their consent to participate in the study, and they received an informed consent form to obtain the signatures. Participant information sheet with study purpose description and information about potential discomfort risks, and their willingness to take part in the study or to stop at any moment, confidentiality and rights of participants is explained to them. After data collection, debriefing was done.

Table 1 presents the socio-demographic details of the participants of the study. The data were collected from a total of 230 subjects, that included 115 patients who were diagnosed with solid tumours (carcinoma) and their partners. The participants were selected from the Government Hospitals in Hyderabad. During the study, 150 couples were approached, but some of the patients refused to participate in the study, and in some cases, the spouse was not available in the hospital. The final sample consisted of 115 patients diagnosed with cancer, and their partners.

The participants during the explorative phase of the study included 35% Head & Neck Cancer, 26% Breast Cancer, 17% Reproductive Cancer, 9% each for Gastrointestinal and Lung Cancer, 1% each for Renal Carcinoma, and Squamous Skin Carcinoma, and 2% for Sarcoma. The age range of the patients was 20 to 65 years with a mean age of 46 (SD=8.22). Among patients diagnosed with cancer, 51% were males,

and 49% were females. Only married people were included in the study. Majority of them are from lower or middle socio-economic status, and 87% have obtained education below graduation level. Only 22% were employed, 17% were self-employed, 21% were employed but on leave and 40% were unemployed in the patient group. Whereas, among the spouse group, 10% were on leave, and 20% were unemployed. Among the patients, 28% reported to have a family history of cancer, and 53% reported the use of tobacco, 12% had alcohol consumption, whereas, among the spouse group, tobacco and alcohol consumption was reported to be 47% and 19% respectively.

Table 1.1

Sociodemographic details of Cancer patients (n=115)

Patient characteristics	Frequency	Percent
Education		
Below 10th grade	70	61
Above 10th grade & below graduation	30	26%
Graduation,	12	10%
Post- graduation	3	3%
Occupational status		
Employed	25	22%
Self-employed,	20	17%
Employed, but on medical leave	24	21%
Un-employed	46	40%
Socio-economic status		
Lower SES	54	47%
Medium SES	51	44%
Upper SES	10	9%
Marital status	Married	100%
Religion		
Hindu	75	65%
Muslim	36	31%
Christian	4	4%
Nativity		
Hyderabad & Telangana	78	68%
Andhra Pradesh	23	20%
Karnataka	4	3%
Maharashtra	10	9%
Family History of Cancer		
Yes	32	28%
No	83	72%
Lifestyle habits		
Smoking, tobacco products	61	53%
Alcohol	14	12%
Others	10	9%
None	30	26%

Table 1.2

Sociodemographic details of Spouses of Cancer patients (n=115)

Spouse Characteristics	Frequency	Percent
Gender		
Male	56	49%
Female	59	51%
Education		
Below 10th grade	50	43%
Above 10th grade & below graduation	32	28%
Graduation,	28	24%
Post- graduation	5	4%
Occupational status		
Employed	50	43%
Self-employed,	34	30%
On medical leave	11	10%
Un-employed	20	17%
Lifestyle habits		
Smoking & tobacco	54	47%
Alcohol	22	19%
Recreational drugs	4	4%
None	35	30%

Research Instruments

Along with the participant demographic form and the Eastern Cooperative Oncology Group Performance Status (Oken, Creech, & Tormey, 1982), this study used six standardised measures for psychological assessment. The psychological instruments comprise the Four-dimensional Symptom Questionnaire (Terluin, et al., 2006), the Illness Perception Scale (Broadbent et al., 2006), and the Body Image Scale in Cancer (Hopwood, Fletcher, Lee & Ghazal, 2001), the WHOQOL-BREF for quality-of-life assessment (World Health Organization Quality of life group, 1998), the Personal Assessment of Intimacy in Relationships Inventory (Schaefer & Olson, 1981), and the Arizona Sexual Experience Scale (McGahuey et al., 2000). The instruments which were applicable only to patients such as Brief illness perception and Body image scales

were modified in order to capture the partner's perception of how the patients feel about their illness and body image respectively. These two comparable scales – Perception of partner about patients' illness perception (PPPIP) and Perception of partner about patients' body image perception (PPPBI) and standardized instruments such as Four-dimensional symptom questionnaire, Personal assessment of intimacy, Arizona sexual experience scale and WHOQOL-BREF were included for assessment of the partner group. For better comprehension of the questionnaire items by the participants, experts translated the instruments into the vernacular languages of Telugu. To eliminate any potential ambiguity, the translated version was back-translated into English and compared to the original.

The following part describes the research instruments. It includes description of the psychometric properties, dimensions and scoring procedures of the instruments.

Socio-demographic data form

This form contains information about the socio-demographics of the patient and their partner, and includes medical and treatment information, marital, education and socio-economic status, as well as partners' details, contact and other relevant information for the study.

Eastern Cooperative Oncology Group Performance Status (ECOGPS)

The ECOGPS was developed in 1982 by Oken, Creech, and Tormey to assess the performance status of cancer patients. ECOGPS is helpful in assessing the functional status of cancer patients when it comes to a patient's level of activity, self-care skills, and other aspects. The tool assists in determining the prognosis in various malignant conditions by describing the patient's ambulatory status, functional status, and need for care. The ECOGPS grade system goes from 0 to 5, with 0 denoting full activity and the ability to perform pre-disease normal activities; 1 denoting some

symptoms and difficulty performing strenuous activities but full ambulation, and denoting less than 50% of bedtime. Grade 2 denotes less than 50% of time spent in bed and the ability to take care of oneself; Grade 3 denotes more than 50% of time spent in bed; Grade 4 denotes total disability and the need for care; and Grade 5 denotes death.

The Four-Dimensional Symptom Questionnaire(4DSQ)

The Four-Dimensional Symptom Questionnaire (4DSQ) measures the psychological states of the participants. The 4DSQ is a self-report questionnaire developed by Terluin, et al. (2006) that helps to differentiate non-specific general distress from depression, anxiety and somatization.

Psychometric properties: According to Terluin et al. (2016), the 4-DSQ's criterion validity was also established, and its Cronbach's alpha ranged from 0.84 to 0.92. The 50 items that make up the 4-DSQ represent four dimensions: somatization, depression, anxiety, and distress. There are options for each item, including no, occasionally, frequently, regularly, and constantly. Sixteen items (e.g., "Did you suffer from worry during the week?") in the 4-DSQ measure the degree of distress. The six items in the depression dimension are as follows: Did you feel meaningless over the past week? Anxiety consists of twelve items (e.g., Do you experience a vague feeling of fear during the first week?) 16 items make up the 4-DSQ Somatization dimension (e.g., Did you experience light headedness or dizziness in the last week?).

Scoring: All of the item scores in each dimension were added together to determine the final score. Responses "no" receive a score of 0, "sometimes" receive a score of 1, and "regularly," "often," and "very often" receive a score of 2. Separate scores for somatization, depression, anxiety, and distress are provided by the 4-DSQ.

When it comes to the distress dimension, a score of more than 10 is considered "moderately elevated," and a score of more than 20 is considered "strongly elevated." About the depression dimension, a score exceeding two was deemed to be "moderately elevated," and a score exceeding five was deemed to be "strongly elevated." Regarding the anxiety dimension, a score of more than four was considered "moderately elevated," and a score of more than ten was considered "strongly elevated." Regarding the somatization dimension, a score above ten was considered "moderately elevated," and a score greater than 20 was considered "strongly elevated."

Brief- Illness Perception Scale

A nine-item measure called the Brief-IPQ is used to quickly evaluate how people conceptualize and feel about illness.

Psychometrics Properties: The Brief-IPQ demonstrated strong test-retest reliability, concurrent validity with pertinent measures, and discriminant validity, reinforced by the scale's capacity to differentiate between various illnesses. Brief-IPQ is a reliable and accurate tool to gauge how different illness groups perceive their conditions. The scale is simple for patients to understand and complete, and researchers and clinicians can quickly score and interpret the results together. Of the nine questions in total, five evaluate the representation of cognitive illness. Consequence (point 1). Timeline (item 2), Identity (item 5), Personal control (item 3), Treatment control (item 4) and Concern (item 6); two of the items evaluate emotional representations; one item evaluates the comprehensibility of the illness (item 7). One of the items is an open-ended question designed to evaluate the causal representation; it asks patients to identify the three main causes of their illnesses.

Scoring: Brief-IPQ has 8 items that are rated using a 0 to 10 response scale, and one open-ended question, and the responses can be grouped into categories such as stress,

hereditary lifestyle, etc. The scores are determined by adding the original scores for items 1, 2, 5, 6, and 8 to the reversed scores for items 3, 4, and 7. An increased score indicates a more serious evaluation of the ailment.

Body Image Scale

Based on the most commonly reported items by patients and healthcare professionals, the Affective, Cognitive, and Behavioural model of body image disturbances forms the basis of the BI Scale. The BI Scale comprises ten self-reported items that inquire about an individual's appearance and any changes that may have arisen from their cancer or treatment. The scale was created with the intention of being able to be used with any group of cancer patients who might have issues with their bodies (Hopwood, 2001).

Psychometric Properties: Cronbach's alpha statistic for BI Scale was found to be 0.93

Scoring: There are 4 choices for the responses: '0 score' is given for 'not at all', '1 score' for 'a little', '2 score' for 'quite a bit' and '3 score' for 'very much'. The total items' scores can be added to get a cumulative score, that indicates towards the body image concerns of patient. The scores range from 0-30, where '0 score' represents having no symptoms/distress and a higher score represented increasing symptoms /distress and a higher score indicates severe body image concerns.

Personal Assessment of Intimacy in Relationship

PAIR, an acronym for personal assessment of intimacy in relationships, was developed by Schaefer & Olson (1981). It provides systematic information on five different types of intimacy: emotional, social, sexual, intellectual, and recreational. A convenient scale is added to record the socially desirable answers given by the

participants; There are total 36 questions; six questions for each dimension and the instrument uses a Likert scale to record the responses.

Scoring: One can assign a score of 1, 2, 3, 4, and 5 to each of the following answers: strongly disagree, somewhat disagree, neutral, somewhat agree, and strongly agree.

Arizona Sexual Experience Scale

Five items on the ASEX measure five aspects of sexual functioning: arousal, sex drive, ability to achieve orgasm, and satisfaction from orgasm. With translations available in 43 languages, its psychometric properties are similar to those of the English version, and it is simple to administer in clinical settings.

Psychometric properties: Strong test-retest reliability, outstanding internal consistency, and scale reliability are all attributes of the ASEX Scale (Elnazer & Baldwin, 2020). *Scoring*: Each question has a possible score ranging from 1 to 6, and the total possible score can be between 5 and 30. The highest score denotes the highest level of sexual dysfunction. According to McGaughey et al. (2000), a total item scoring a 19 or higher; any item scoring a 5 or 6; or any three items scoring a 4 or higher are all considered "sexual dysfunction" according to ASEX.

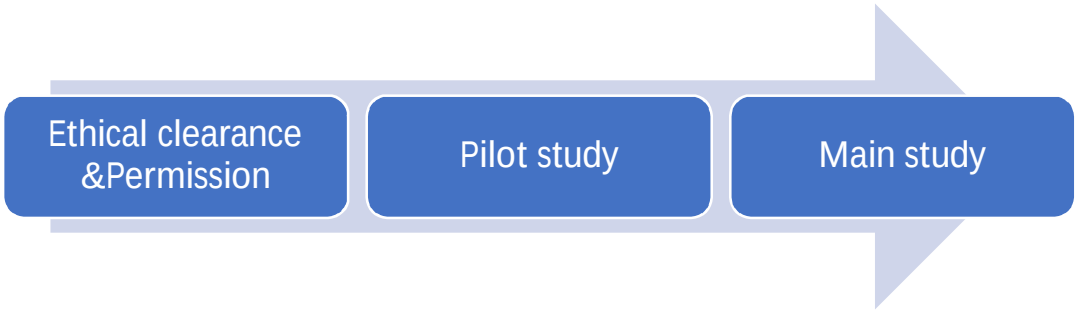
World Health Organisation Quality of life Scale (WHOQOL-BREF)

The WHOQOL-100 assessment has a similar, and shorter 26-item variant called WHOQOL-BREF. Physical, psychological, social, and environmental domains are the four areas that are measured in this comprehensive, cross-culturally valid assessment of quality of life. It can produce a profile of four domain scores from a comparatively small set of 26 items.

Psychometric properties: Using cross-sectional data from an adult survey conducted in 23 countries (n = 11830), psychometric properties were examined. The internal consistency of the scale was found to have a Cronbach's alpha of greater than 0.7; internal consistency, item total correlations, common discriminant validity, and construct validity analyses all show that the instrument has excellent psychometric properties of validity and reliability (Skevington, Lotfy & O'Connell, 2004).

Scoring: There are 26 questions, first question is about overall quality of life, and second question-assess general health; there are 7 questions to assess physical aspects; 6 questions assess psychological aspects; 3 questions capture social aspects of life and eight questions assess environment aspect in quality of life. There are 5 choices to respond to each question and the scores range from 1 to 5, and reverse 3 negatively scored items in order to transform negatively from questions to positively from question. The domain's scores are added together and multiplied by four to produce scores that are exactly comparable to those obtained from the WHOQOL-100. The manual provides a method for converting raw to transformed scores. Total score is generating by adding scores in each domain, along with scores for quality of life and general health. Higher score indicates better quality of life of the respondent.

Procedure



The following paragraph describes the procedure followed for the study. After the proposal has been prepared, the Institutional Ethics Committee has been obtained. The Institutional Ethics Committee, University of Hyderabad (UH/IEC/2021/26), granted ethical clearance and permission for the research proposal. *(Appendix A)*.

Cancer Hospitals from Government sectors in Hyderabad were approached for data collection, and permission for ethical clearance was obtained from the Regional Cancer Hospital *(Appendix A)*. The researcher made sure that all required permissions were obtained prior to the start of the pilot study in order to use the scales for the research. The measurement instrument Database for Social Sciences provided the public with access to several of the scales used in the study, including the four-dimensional symptom questionnaire, and WHOQOL-BREF.

Pilot Study

A pilot study involving 15 couples was conducted to validate the viability of the suggested design and the accessibility of the participants. The primary study was carried out following the fulfilment of the aforementioned requirements.

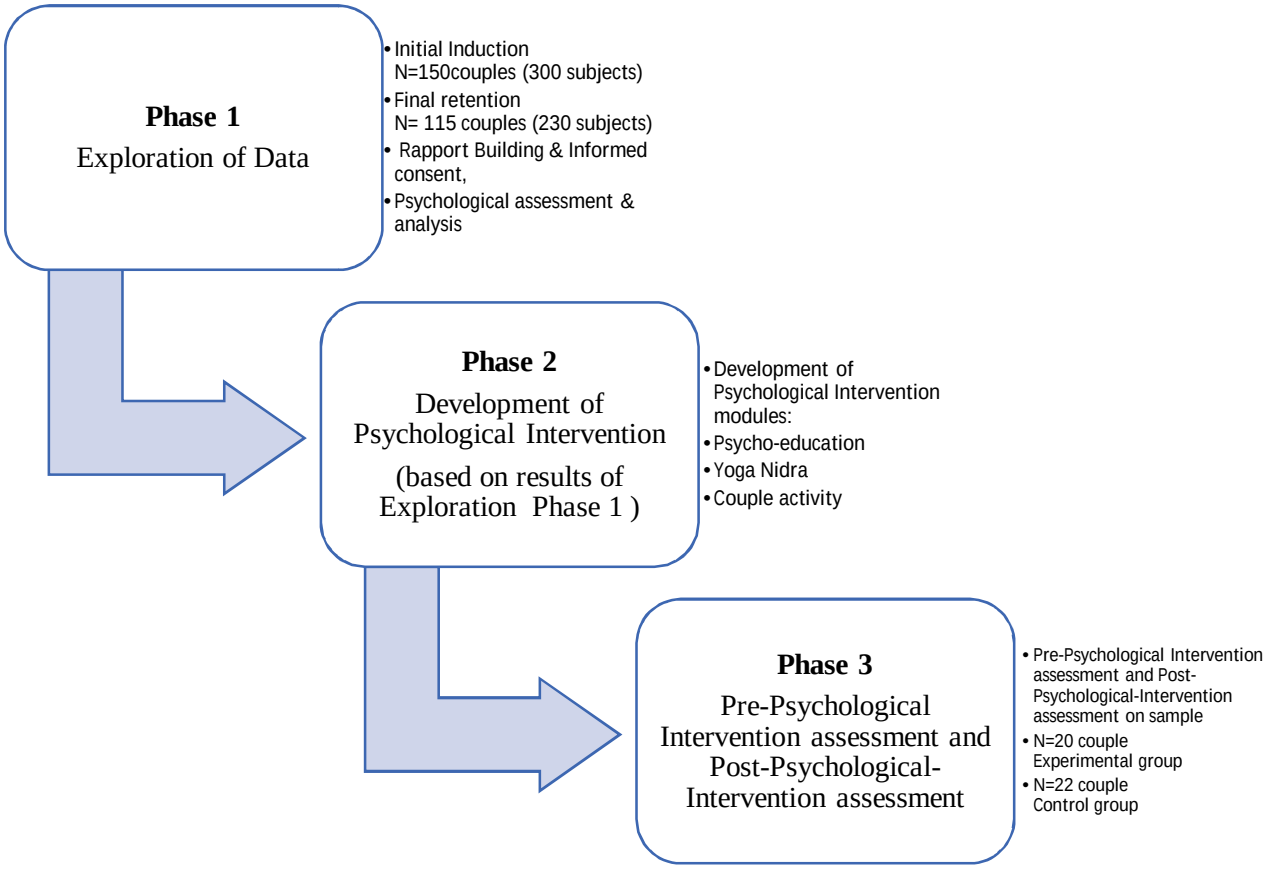
Main Study

Main study was conducted in three phases. Phase 1 (Exploration of psychosocial factors), followed by Phase 2 (Development of intervention), and finally concluded with Phase 3 (Testing of developed intervention). For the main study, data was collected from 115 couples (230 subjects) in Phase 1, and 42 couples in Phase 3 (a total of 84 subjects). Thus, a total of 157 couples (314 subjects) including cancer patients and their partners participated in the study.

Recruitment Process

Upon clearance from the hospital's ethical committee and authority for data collection, cancer patients and their partners who met the study's eligibility requirements were contacted in hospital wards, rooms, and outpatient clinics. Following a brief introduction, rapport was established and the patient and partner were given participation information sheets. The goal of the research project, any discomfort related to the investigation, safety measures, and other pertinent information were given. Confidentiality of the data was ensured and any doubts that require clarification were explained to them. After obtaining informed consent for participation in the study, signatures or thumb impression was taken on the consent form *(Appendix B)* from each participant, including the patient and the partner. Further, socio-demographic data form was used to collect detailed information about patients diagnosed with cancer and their partners.

Flow chart of the study design is presented below:



PHASE 1- EXPLORATION OF DATA

During the exploratory phase of the study, more than 200 couples were approached. However, only 162 couples have shown interest to participate in the research. Out of 162 couples interviewed for the study, some of the patients had difficulty to participate soon after the radiation treatment and post-surgery follow ups, and therefore had to be excluded from participating in the research. Some patients had expressed unavailability of their spouse for their participation in the research, and the data was incomplete; six patient's condition deteriorated and deaths were reported in the follow up phase and therefore, these incomplete couple data had to be eliminated from the study.

The final sample after data cleaning consisted of 115 couples (230 subjects) in the Phase 1 (exploration phase). Based on the results from the exploration phase 1 in the research, an intervention was developed, and for the Phase 3 intervention testing, around 50 couples were approached. However, only 20 couples were retained in the intervention group, and 22 couples in the control group (22 couples). Thus, a total of 42 couples (84 subjects) participated in the third phase of intervention testing in the research.

Administration of the measures

The patient was given their Eastern Cooperative Oncology Group Performance status after the informed consent was signed and their demographic information was documented. Patients who received scores of 0, 1, or 2 on the ECOGPS were then given additional tests. Instructions were given to the participants, explaining questions in simple terms and where necessary in the vernacular language (Telugu & Hindi), and using translated forms in the vernacular languages to give responses to the measures. Four-Dimensional Symptom Questionnaire (4DSQ), Personal Assessment of Intimacy in a Relationship (PAIR), World health Organisation Quality of life scale (WHOQOL-BREF), and Arizona Sexual Experience Scale (ASEX) were administered to both patient and partner groups. On the other hand, Body image and Illness perception scale were applicable to patients, and administered in the patient group only. Therefore, the modified scales for the partner, which capture Perception of Partner about Patients' Body Image perception (PPPBI), and Perception of Partner about Patients' Illness Perception (PPPIP) were administered in the partner group to have an understanding about partners' perception about patient's concerns, with respect to perceived body image and perceived threat of illness. Thus, appropriate psychological instruments were provided and responses were collected from cancer patients and their partners. Each measure took between 10 -15 minutes, and therefore the interview was planned in short breaks.

Following the completion of the study, the researcher conducted a debriefing and answered any questions that the participants had while the measures were being administered.

Anticipated ethical issues and mitigation

There are no potential risks anticipated as this study does not involve any clinical procedure, and there is no administration of any medicine or clinical procedure by the researcher that creates any problems for the participants. But sin case of any psychological discomfort, the participants were asked to inform the researcher. If any of the questions cause distress in any of the participants, they were allowed to halt the session, and may choose to discontinue. The participants were assured that any emotional distress will be attended and addressed by the trained investigator. The interaction with the investigator could serve as a platform to vent feelings and provide psychosocial comfort as the participants will share it confidentially with a professional.

During the exploration of data with quantitative measures, to get more detailed information about the worries of a couple who received a cancer diagnosis, a semi-structured interview was conducted during the Phase 1. Qualitative analysis was made, using 'open-ended' questions aimed to explore their mental frame dealing with the diagnosis of cancer, the psychological states, negative emotions, body image changes; and further exploring how they experience the illness, phases of treatments, and its long-term impact on body and mind. The couples were approached to narrate the changes in their life, and whether it affected their togetherness, and intimacy in the relationship. Also, they were asked whether they are comfortable to discuss their concerns, and to describe how they like to spend their time together, and support one another. The couples were approached following the PLISSIT Model for the assessment of sexual functioning aspects. They were informed and consent being taken to discuss whether they are

comfortable to resume normal sexual functioning as earlier in their matrimony, or would they like to discuss any sexual concerns, or difficulties, and opt to seek medical, and psychological intervention for the same

PHASE 2 -DEVELOPMENT OF INTERVENTION

Procedure

Based on results from Phase 1 data analysis, Phase 2 focused on development of Psychology Intervention that comprises of Psychoeducation, Yoga Nidra and Couple activity.

1.Psycho-education

First level intervention is psycho-education for educating patient with cancer and their family to lead a good quality of life after cancer. Psychoeducation is a term used to describe the process of educating and informing a patient and their family about the nature of their illness. covering the cause, signs, course, effects, prognosis, course of treatment, and available options (Barker, 2020).

Cancer Information scale for Couples dealing with Cancer (CIS-CC)

For the intervention study, first of all, a scale was developed to understand the beliefs and awareness about cancer from cancer patients and their partners. Thus, myths and misconceptions related to cancer were documented and quantified using this scale, which is named as Cancer Information Scale for Couples dealing with Cancer (CISCC). Oncologists, Psychologists, health care professionals have contributed for developing the items in scale, which was later tested on cancer patients and partners to check its feasibility and the response generation. Here ‘no’ response is given a score of ‘0’ marks, whereas, ‘yes’ response to the question is scored as ‘1’ mark. Higher score indicates higher myth or misconception among cancer patients and their partners. Thus, myths and

misconceptions related with cancer and sexual health were quantified using the scale, and psychoeducational modules were developed to address their concerns.

Thus, Psychoeducation intervention focused on delivering comprehensive cancer care modules, and includes total 6 sessions which is paced each week for 30 minutes duration. The psychoeducation modules include audio visuals, as well as print materials in English and native languages describing self-care, management of pain in cancer, cancer related fatigue, relaxation techniques to address emotional distress and disturbed sleep, adherence to healthy diet and physical activity, and facilitating communication, interaction and intimacy between cancer patients and partners. Oncologists have contributed for developing psychoeducation modules with educational videos and materials for the individuals taking part in this study. Psychoeducational modules such as educational materials, booklets, and audio-visuals were used to make the session more interactive between the health care professionals, patients & their family.

2. Yoga Nidra (Psycho-therapeutic intervention)

A set of procedures for guided meditation and visualization, known as Yoga Nidra, is an age-old healing technique that causes the body and mind to relax. The ancient method is done by adapting the Bihar School of Yoga, which follows a methodical and scientific method of practicing Yoga Nidra. An article presenting advantages and application of Yoga Nidra describes that in the preparatory phase of Yoga Nidra, the practitioner assumes the "shavasana pose," which involves lying on the back with both lower and upper limbs separated at a roughly 45-degree angle. The application of the "nyasa technique" in Yoga Nidra facilitates the participant's experience of the body as an energy magnetic field. This technique is characterized by the participant's consciousness moving through various body parts. The individual also keeps an eye on their breathing without obstructing their ability to inhale and exhale while concentrating

on the vital energy known as "prana." The distribution of prana, or life energy, throughout the body is made possible by breathing. The most important method for training the mind during Yoga Nidra is the "Sankalpa technique." The word "Sankalpa," which means "intention" or "determination," helps form affirmations that are constructive and directs one's whole being in a constructive path. As a result, Yoga Nidra can be used as a therapeutic technique to treat stress and disorders associated with it that are brought on by hardship and life's challenges.

Visual Analogue Scale (VAS)

The relaxation response brought about by the psychotherapeutic practice of Yoga Nidra is measured using the visual analogue scale (VAS). The VAS scale is a 11point rating scale with scores ranging from 0 to 1, here '0' explains no relaxation, and '10' explains maximum relaxation.

3) Couple activities

Couple Intervention for Cancer is conceptualised as 'CARE Model'. It uses CARE as an acronym and focuses on generating 'C'- Communication and Compassion among couples, 'A'-Accepting and aiding each other, acknowledging the present situation and making new affirmations in life, 'R'- emphasises on rejuvenation in terms of relaxing, and reviving the relationship, restoring balance and harmony; and 'E' stands for emotional support, enhancing emotional health and empowering each other.

In order to develop couple activity schedule, couples were approached and asked few open-ended questions to have a deeper understanding about their association, and interaction on daily basis. The questions explored whether the couples spend quality time with one another, or do they participate in daily activities, and do they discuss and share their concerns, etc. This helped to plan couple activities with a

personalised approach, so as to improve their interaction, and intimacy in the relationship.

Feedback Form for measuring Couple activity (FF-CA)

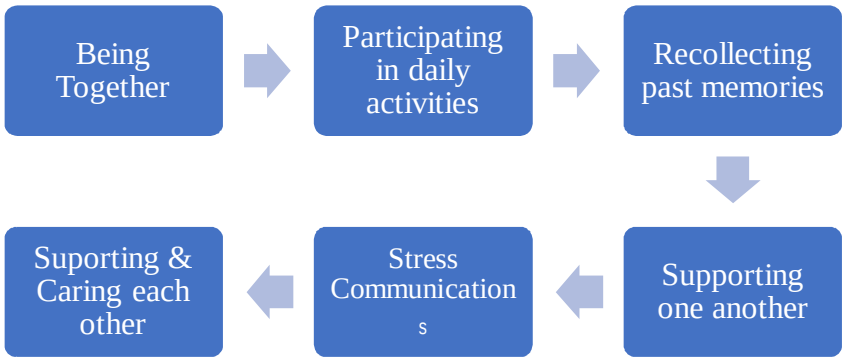
The couple's activity response sheets, observation record and feedback had to be collected, and carefully studied, and qualitative analysis was focused here. In order to interpret the findings in the last stage of the research, the current study employs a mixed method approach that combines quantitative and qualitative analysis.

For the development of couple activity schedule in the intervention modules (Phase 2), an in-depth exploration, and detailed interview was conducted with 20 couples in the experiment group. To evaluate the apparent changes in life after being diagnosed with cancer, the couples were asked if they were able to spend 'quality time' in the sense how often and how long they talk to each other on several matters such as family, health, financial, etc, and how often do the 'duo' participate in an activity such as attending to daily chores together, and how often they spent 'good time' together such as watching television, leisurely sitting and spending together time. Also, explored what 'challenges' they faced in their present life. They were asked to narrate how active they are in their personal and social life, and whether they 'recollect' the good time spent together in life, and do they bring up 'conversation' and challenges about the present situation. Further, they were encouraged to open up 'difficult-communication' and how comfortable they are as a couple to discuss relationship issues, 'sexual concerns' (if any), and express their fears, and uncertainty about future, etc. Based on the responses given by the couple, an activity log was created that focused on improving the intimacy in the relationship, and quality of life.

Couple Activity Schedule

The sequence of activity evolved for the participants (couple dealing with cancer diagnosis and treatments) as the third psychological intervention for the study is demonstrated in the figure given below.

Sequence of Couple Activity for Psychological Intervention



Beginning from simple tasks for participation, such as being together, and participating in daily activities such as having a meal together, going to religious or sacred places, or performing a ritual together; the activity progressed to spending 'we-time' together, where couples were asked to recollect the past memories and share their experiences. The couple activities were slowly directed to 'stress communication' where the couples were encouraged to express their worries about the health condition. The challenges after being diagnosed with cancer, and subsequent treatments thereafter were also explored. The anxiety and apprehension related with body image and sexual concerns were discussed, and finally how the couple would like to support each other to resolve the difficulties, and be together in the journey with cancer was explored. The activity log schedule was created and explained to the couples, and observation and response sheets were collected every week.

Table 2

Schedule for Psychological Intervention

S. No	Type of Intervention	Method	Session schedule and scale used.
1.	Psycho-education	CISCC (Cancer information scale for couples dealing with cancer) included: Handout prints/ Pamphlets and soft copies of education materials. video clips that have already been recorded, featuring senior oncologists delivering the necessary information. and facts about sexual health aspects in cancer care. This helped to create awareness about the emotional, cognitive and behavioral responses, providing necessary information to enhance cancer patients' and their partners' quality of life and the quality of their couple relationships.	One session every week for six weeks. The effectiveness of cognitive intervention (psycho-educational training) is measured using the CISCC (pre- and post) scale.

2.	Relaxation	Yoga Nidra technique: Six psycho-therapeutic sessions of the practice of Yoga Nidra are conducted after a familiarization session. A recorded version of Yoga Nidra (English, Hindi & Telugu versions by professionals) Subjects self-rated the degree of deep relaxation induced by practicing Yoga Nidra using a Visual Analogue Scale (VAS) with a range of 0 to 10.	Subjects used a Visual Analogue Scale (VAS) with a range of 0 to 10 to rate the level of deep relaxation they experienced after practicing Yoga Nidra. Scale-Visual Analogue Scale (VAS) is used to measure relaxation responses (pre-and post)
3.	Couple Activity		Six weeks at the rate of one session per week Scale- Couple activity log along with feedback to assess their progress.

Data Analysis

Phase 1

Using IBM SPSS (version 20.0), the data were analysed in the first phase of research (for the exploration of the psychosocial factors) to compute descriptive statistics (Frequency, Mean, and Standard Deviation) and inferential statistics (Paid t-test, Pearson's Product Moment Correlation, Hierarchical regression, and Cluster analysis (Dendrogram). In the second phase of the study, a suitable health psychology intervention was developed based on the analysis conducted in the exploratory phase and the responses provided for a semi-structured interview that measures the concerns of a couple dealing with cancer qualitatively.

Phase 3

To evaluate the efficacy of the developed intervention, which was concentrated in the present, the third phase of the study employed an experimental research design with an experimental a and control group.

CHAPTER IV

RESULTS

A summary of the findings, including the description of results is provided in this chapter. The prime objective of the research is to examine the psychosocial correlates of sexual health in cancer patients and their partners and develop a health psychology intervention (with an integrated approach) that aims to enhance the quality of life for cancer patients and their partners by addressing their psychological and sexual health. Three sections of the study's findings are covered. Phase 1 involves investigating psycho-social aspects in cancer patients and their partners, including psychological states, body image, perceptions of illness, relationships, quality of life, and sexual functioning. Based on the analysis, the development of psychological intervention is discussed in Phase 2. The impact of the psychological intervention package (along with the medical intervention) is examined in Phase 3 by looking at the difference between pre and post-psychological intervention assessment. This includes psychological intervention assessment (Pre & Post-intervention assessment) of psychological states, body image, illness perception, relationship, quality of life and sexual functioning in couples dealing with cancer.

Phase I

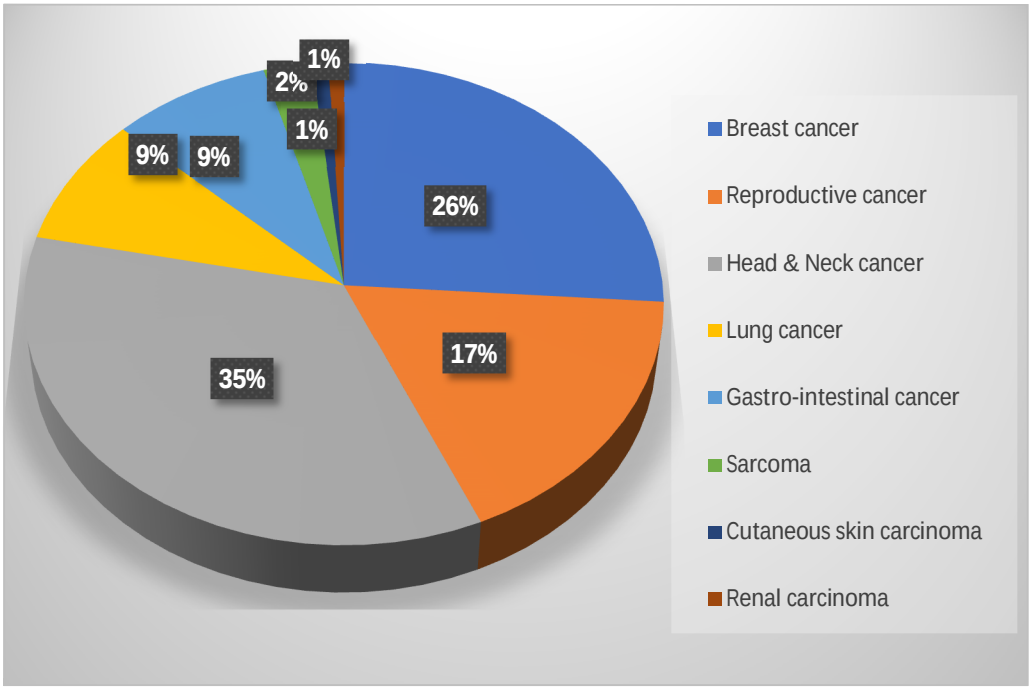
Data were gathered from 230 subjects in Phase 1 (Exploratory Phase of the Research), comprising 115 patients and their partners who were diagnosed with solid tumours (carcinomas). The participants were selected from Government Cancer Hospitals in Hyderabad. During Phase I of the study, various aspects including psychological states, body image, perceptions of illness, intimacy in relationships, quality of life, and sexual functioning were investigated in cancer patients and their partners. Descriptive statistics,

Paired t-test, Pearson's Correlation, Multiple Linear Regression, and Hierarchical Cluster Analysis (Dendrogram) were employed. When necessary, graphs and tables were used to display the results of the analysis of the obtained quantitative data using SPSS 21.0 version.

The descriptive statistics explain the socio-demographic profile (Table 1.1 & 1.2), clinical descriptions (Table 3), performance status (Table 4) of the participants. Figure 1 demonstrates the different types of cancer patients included in the study.

Figure 1

Pie chart depicting types of Cancer in the Explorative phase



The figure 1 demonstrates the distribution of data comprising of 115 cancer patients and their spouses (a total of 230 subjects) which includes 26% Breast Cancer cases (n=30), 17% Reproductive Cancer (n=20), 35% Head & Neck Cancer (n=40), 9% Lung Cancer (n=10), 9% Gastro-Intestinal Cancer (n=10), 2% Sarcoma,(n=3), 1% Cutaneous Squamous cell Carcinoma (n=1), and 1% Renal Carcinoma (n=1)..

Table 3

Frequency and percentage of Stages of Cancer in Explorative Phase 1

Cancer Stage	% (n)
Stage 1	10.43 (12)
Stage 2	71.30 (82)
Stage 3	18.26 (21)

Table 3 describes the frequency and percentage of patients grouped under stages I, II, & III. In stage I the frequency is observed as n = 12 in Stage I, n=82 in Stage II, and n= 3 in Stage III which contributes to 10.4%, 71.3% & 18.3% respectively.

Table 4

Frequency and percentage of Grades for Performance scale (ECOGPS) in Explorative Phase 1 (n=115)

ECOGPS	% (n)
Grade 0 -fully active and able to carry out pre-disease normal activities	8.69 (10)
Grade 1 indicates some symptoms and difficulty to carry out strenuous activity, but are fully ambulatory	75.65 (87)
Grade 2 means spends less than 50% on bed and capable of self-care	15.65 (18)

Note. *ECOGPS = Eastern Cooperative Oncology Group Performance Status*

Cancer patients within ECOGPS Scale 2 are included for the study. Beyond Grade 2 are excluded, as they are mostly confined to bed and need assistance for daily activities.

The following section describes the results in the order of the objectives of the research.

Measurements of Psychological states, Body Image, Illness perception, Intimacy, quality of life and Sexual functioning in patients diagnosed with cancer and their partners

The first objective of the research is to examine the psychological states, perceptions of illness, body image, relationship dimensions, quality of life, and sexual functioning of cancer patients and their partners between the ages of 21 and 65 using standardized psychological instruments.

A comparison was made to have a better understanding of these dimensions in the couple, and an attempt was made to find out if there are any significant differences in the level of psychological states, body image, illness perception, intimacy, quality of life, and sexual functioning among cancer patients and their partners, and the results pertaining to each of these parameters are described in the following section. Table 5 given below depicts the mean value and standard deviation observed in the psycho-social dimensions such as psychological states, body image, illness perception, dimensions of intimacy, quality of life and sexual functioning among the patients and partner group. The comparison of psycho-social dimensions among cancer patients and their partners are demonstrated in the Figure 2.

Table 5

Psycho-social dimensions among Cancer patients & partners in Explorative Phase 1 (n=230)

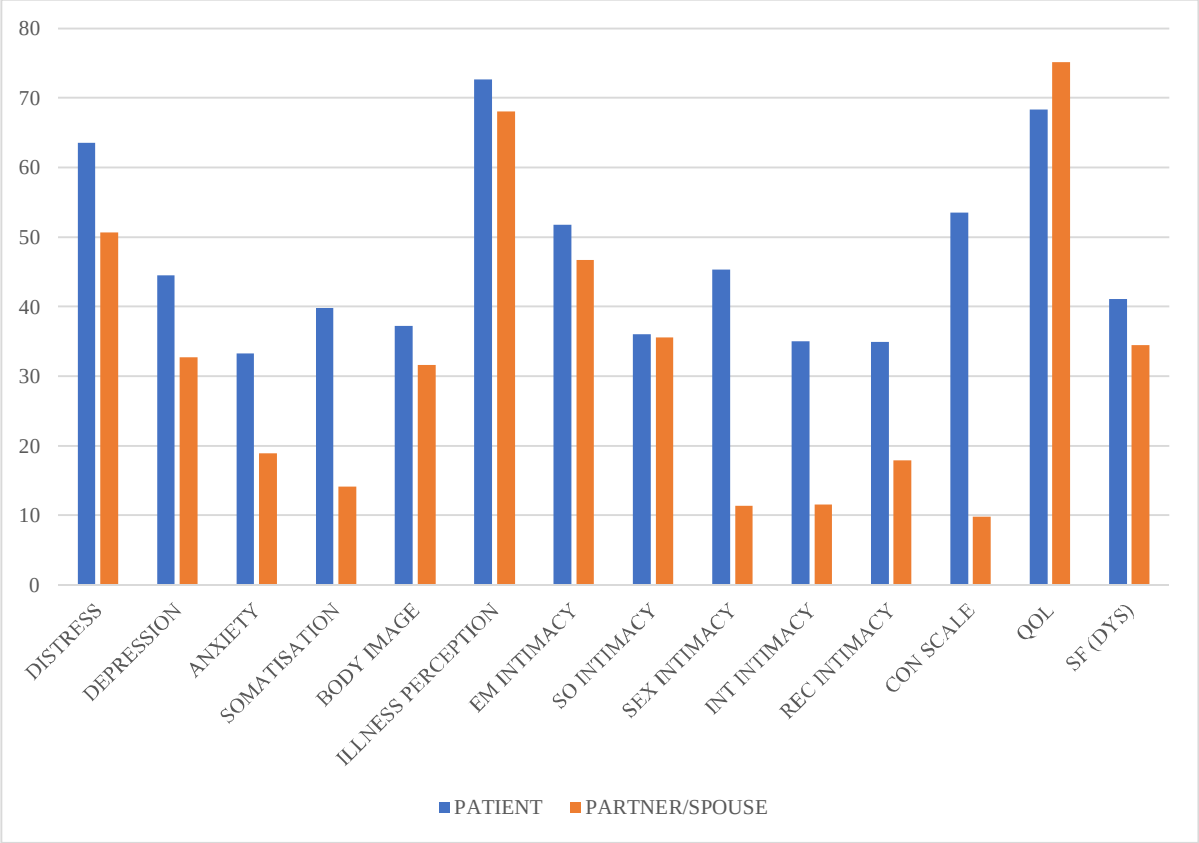
Psycho-social Dimensions	M (Patient)	SD	CV	M (Partner)	SD	CV
Distress	20.35	5.39	26.48	16.23	5.34	32.90
Depression	5.34	2.76	51.68	3.93	1.83	46.56
Anxiety	7.99	3.47	43.42	4.54	2.49	54.84
Somatization	12.75	4.74	37.17	4.54	3.41	75.11
Body Image	11.17	6.08	54.43	9.49	4.73	49.84
Illness Perception	58.20	3.10	5.32	54.45	4.86	8.92
Emotional Intimacy	15.55	2.60	16.72	14.03	3.17	22.59
Social Intimacy	10.83	4.27	39.42	10.69	4.11	38.44
Sexual Intimacy	13.62	12.25	90.07	3.41	2.79	81.81
Intellectual Intimacy	10.62	10.14	95.48	3.47	2.75	79.24
Recreational Intimacy	10.48	3.81	36.35	5.39	1.82	33.76
Convenience Scale	16.07	15.77	98.13	2.95	2.69	91.18
Quality of Life	68.35	11.57	16.92	75.23	9.62	12.78
Sexual Functioning	12.35	.235	1.90	10.35	.219	2.11

Note. *M = Mean; SD = Standard Deviation; CV = Coefficient of Variation*

Coefficient of variation is a measure of dispersion that is used to gauze the extent of variability of data. It measures the variability in the data set. If it is more than 33%, it is heterogeneous, which explains that there are different causes contributing to it. After normalisation of data, and converting mean value into percentage, the figure below presents the comparison of values among cancer patients, and their partners.

Figure 2

Comparison of Mean of Cancer patient & partner/ spouse dimensions (Psychological states, Body image perception, Illness perception, Levels of Intimacy, Quality of life & Sexual functioning)



In the figure 2 The bar graph demonstrates the comparison of the mean value between cancer patients and their partners. The dimensions compared here include psychological states such as distress, depression, anxiety, and somatisation; body image; illness perception; intimacy in a relationship such as emotional, social, sexual, intellectual, and recreational; quality of life and sexual functioning/experience.

Psychological states

The levels of psychological states, and their four dimensions-distress, depression, anxiety and somatisation in the cancer patient group, and partners group is shown in Table 4 given below.

TABLE 6

Comparison of Psychological Parameters-distress, depression, anxiety, somatisation for ascertaining the requirement of psychological interventions (n=230)

Psychological states	M (Patient)	SD (Patient)	M (Partner)	SD (Partner)
Distress	20.35	5.39	16.23	5.34
Depression	5.34	2.76	3.93	1.84
Anxiety	7.99	3.47	4.54	2.49
Somatisation	12.75	4.74	4.54	3.41

Note. M = Mean; SD = Standard Deviation.

It is observed from the results that the mean score of distress among the cancer patient group was M=20.35 (Distress >20 strongly elevated), (SD=5.39) when compared to spouse distress scores was found to be M=16.23 (>10 moderately elevated), (SD=5.34). The mean scores of depression in Cancer patients is found to be M=5.34, (>5 strongly elevated), (SD=2.76), when compared to the spouse group with a mean score 3.93 (>2 moderately elevated), (SD=1.84). There is a moderate elevation (anxiety score>8) in anxiety levels in cancer patients with mean score M=7.99, (SD=3.47), whereas, the anxiety scores are within the normal range (scores 0-7) in the partner group with a mean score M=4.54, (SD=2-49). Likewise, there is a moderate elevation (scores>10) in the somatisation among the patient group with a mean score M=12.75 (SD=4.74), whereas in the partner group, somatisation scores are found to be within the normal range (within 0-10), with a mean score M=4.54, (SD=3.41).

Figure 3.

Comparison of psychological states- distress, depression, anxiety & somatisation in the Cancer patient & partner group

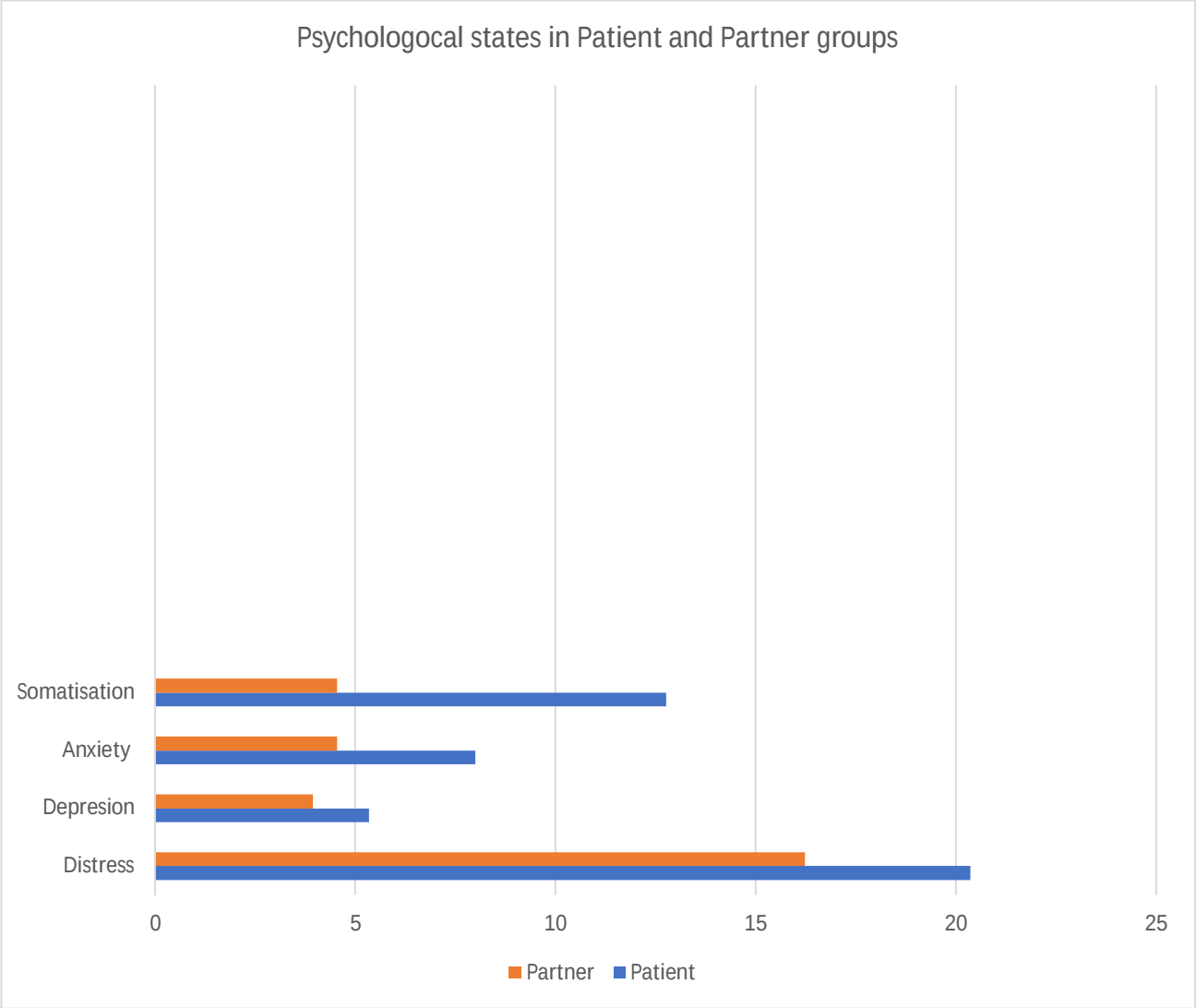


Figure 3 demonstrates the comparison of Psychological States between the patient and partner groups. Cancer patient groups present a higher level of distress, depression, anxiety and somatisation when compared to the spouse group.

Body Image Perception

An attempt was made to study Body Image Perception in patients and partners. The Body Image scale- specific to cancer was used to study the perception of body image (PBI) among cancer patients, and the scale was modified to examine the perception of the

partner about the patient's perception of body image (PPPPBI). The total Mean score among the patient group was 11.17, and among the partner group is 9.48. The mean values of each item among the patient and partner groups are shown in Table 7.

It is observed that there is a similarity in the responses of the patient and partner, and the mean scores obtained among the patient group (M=11.17, SD=6.08), and partner group (M=9.48, SD=9.48) with respect to body image perception are similar. The cancer patient group reported that they find their body less whole (item 8), the mean value is found to be higher (M=1.76) when compared to their partners (M=1.3). The result show that the patient group had expressed higher dissatisfaction with the body (item 9) with a mean value (M=1.31), when compared to the partner group (M=0.91). An independent t-test shows statistical significance in the mean differences in the items pertaining to physical aspects of body image. The cancer patient group reported that they find their body less attractive (item 2) p>.001, dissatisfaction about their appearance (item 3), p>.01, finding their body less whole (item 8) p>.000, and expressed higher dissatisfaction with the body (item 9) p>.000.

Table 7

Summary of independent t-test to compare the perception of body image in Cancer patients, and the perception of partner with respect to body image perception of patient

Dimensions of body image	**M (Patient)**	**M (Partner)**	***t***	**Sig.**
Self-conscious	1.64	1.4	1.838	0.067
less attractive physically	1.56	1.23	3.242	**0.001****
dissatisfaction about appearance	0.65	0.37	2.566	**0.011***
feeling less feminine/ masculine	0.57	0.63	-0.697	0.486
difficulty to look undressed	0.54	0.55	-0.127	0.699
less sexually attractive	1.01	0.9	1.097	0.274
avoiding people	1.13	1.09	0.226	0.821
body less whole	1.76	1.3	4.359	**0.000*****
dissatisfied with body	1.31	0.91	3.617	**0.000*****
dissatisfied with scar marks	1	1.1	-0.912	0.363
Total score	11.17	9.48		

Note. *M=Mean values t=t-test *= p*<.05, **= *p*<.01, ***= *p*<.001.

Figure 4

Comparison of Perception of Body Image comparison between the Cancer patient & partner group

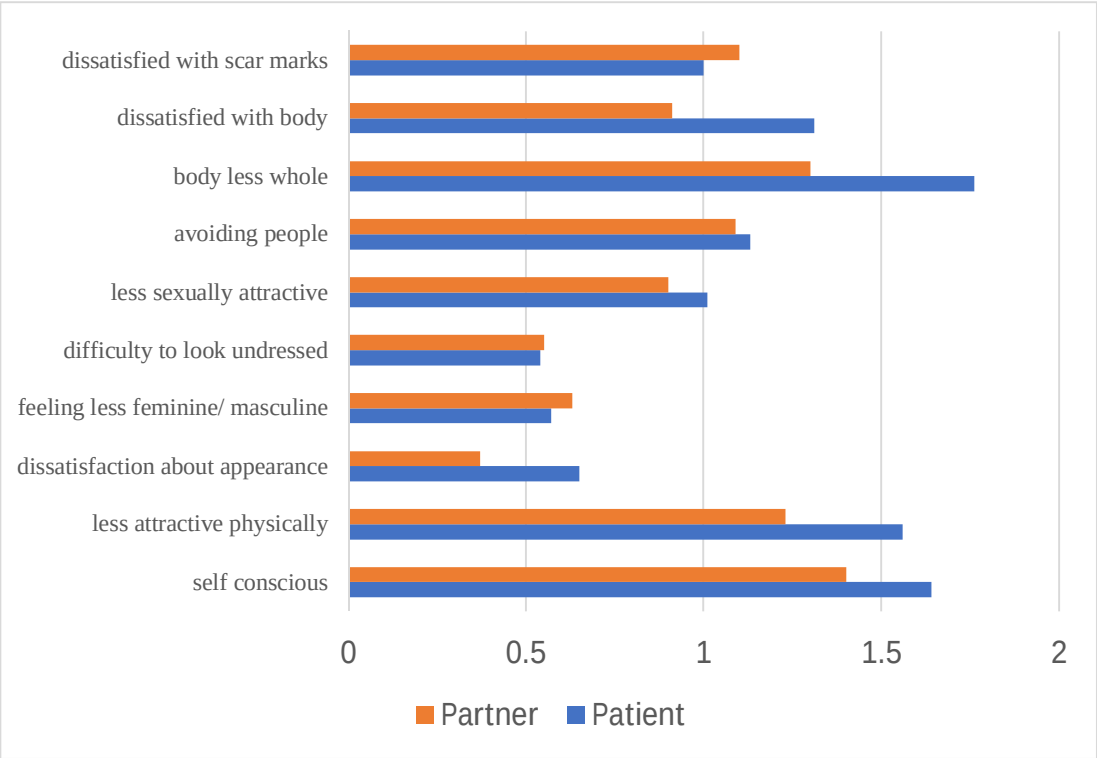


Figure 4 demonstrates the comparison drawn with respect to perception of body image (PBI) reported by cancer patients, and the perception of partners about patient's perception of body image (PPPBI).

Illness Perception

Brief – Illness Perception Questionnaire captures a detailed information about the cause, consequence, timeline, personal control, treatment control, identity, coherence and emotional representation of illness and the instrument was modified to record the perception of a partner about the patient's perception of their illness. A cumulative score (8 items) measures the illness perception, and a higher score reflects a more threatening view of illness.

The findings show that cancer patients believe their condition to be more serious. It is discovered that the overall score of illness perception is higher among patients with a mean score M=58.20, (SD=3.10), when compared to partners who had a mean score of M=54.45, (SD=4.86).

Though there are similarities in the responses given by the patient and partner in most of the dimensions such as consequence of illness, timeline, identity, illness concern and emotional patients representation, derived from the Items 1,2,5,6, and 8 respectively, there are some differences in the responses (with respect to items 3,4, and 7) that describes about personal control, treatment control and coherence respectively. The patient had reported low personal control (M=2.62), when compared to partner (M=5.63); and high treatment control (M=6.8) when compared to partner (M=2.94). There is a difference in the mean value for coherence which describes their mental association with the illness. The mean score of Cancer patients is found to be low (M=1.2), when compared to their partner score (M=4.3).

Table 8 and Figure 4 illustrates the Patient's Illness Perception (PIP), and the Perception of Partner about the Patient's Illness Perception (PPPIP).

Table 8

Summary of independent t-test comparing the perception of Illness perception in Cancer patients, and perception of partner with respect to Illness perception of patient

Dimensions of illness perception	M (Patient)	M (Partner)	*t*	Sig.
Consequence	9.03	8.65	2.610	**0.010****
Timeline	7.68	7.14	3.547	**0.000*****
Personal control	4.23	5.63	-7.203	**0.000*****
Treatment control	8.13	2.94	6.302	**0.000*****
Identity	8.09	8.03	3.809	**0.000*****
Illness concern	8.85	9.03	-1.292	0.198
Coherence	5.38	4.3	5.094	**0.000*****
Emotional representation	8.60	8.73	-0.903	0.368
Total score	58.20	54.45		

Note. *M=Mean values t=t-test, *= p<.05, **= p<.01, ***= p<.001.*

The total score, which is derived from adding up the scores of all items, indicates how serious or benign the illness is thought to be. A higher score indicates a more serious assessment of illness. Here, results shows that both the patient and partner group perceive the illness as threatening, and their scores are similar except that item 4 (treatment control) which explains how individual perceives their illness can be controlled with treatment, patients score higher (M=8.13) when compared to partners (M=2.94). Whereas, Item 3 which explains personal control of illness, the partner perceives a higher score (M=5.63) when compared to cancer patients (M=4.23). The coherence (association with the illness) quantitatively measured by Item 7; patients score higher (M=5.38) when compared to partners (M=4.3). Although all the mean values are higher in patients, when compared to patients, the personal control is found significantly higher among partners, and treatment control is significantly higher in cancer patients. Thus, when partners think that there are

better chances of personal control for cancer illness, the patients are of the perception that there are higher chances of treatment control. Further, independent t test analysis explains the magnitude of differences between the patient and partner with respect to illness perception. Though there are similarities in the responses given by the patient and partner, there are statistically significant mean differences (in items 1,2,3,4, 5 and 7) that describe consequence, timeline, personal control, treatment control, identity and coherence respectively, with p>0.000.

Figure 5 is the diagrammatic representation of Patients' Illness Perception (PIP), and partners' perception about patient/s illness perception (PPPIP).

Figure 5

Comparison of dimensions of Illness perception between the Cancer Patient & Partner group

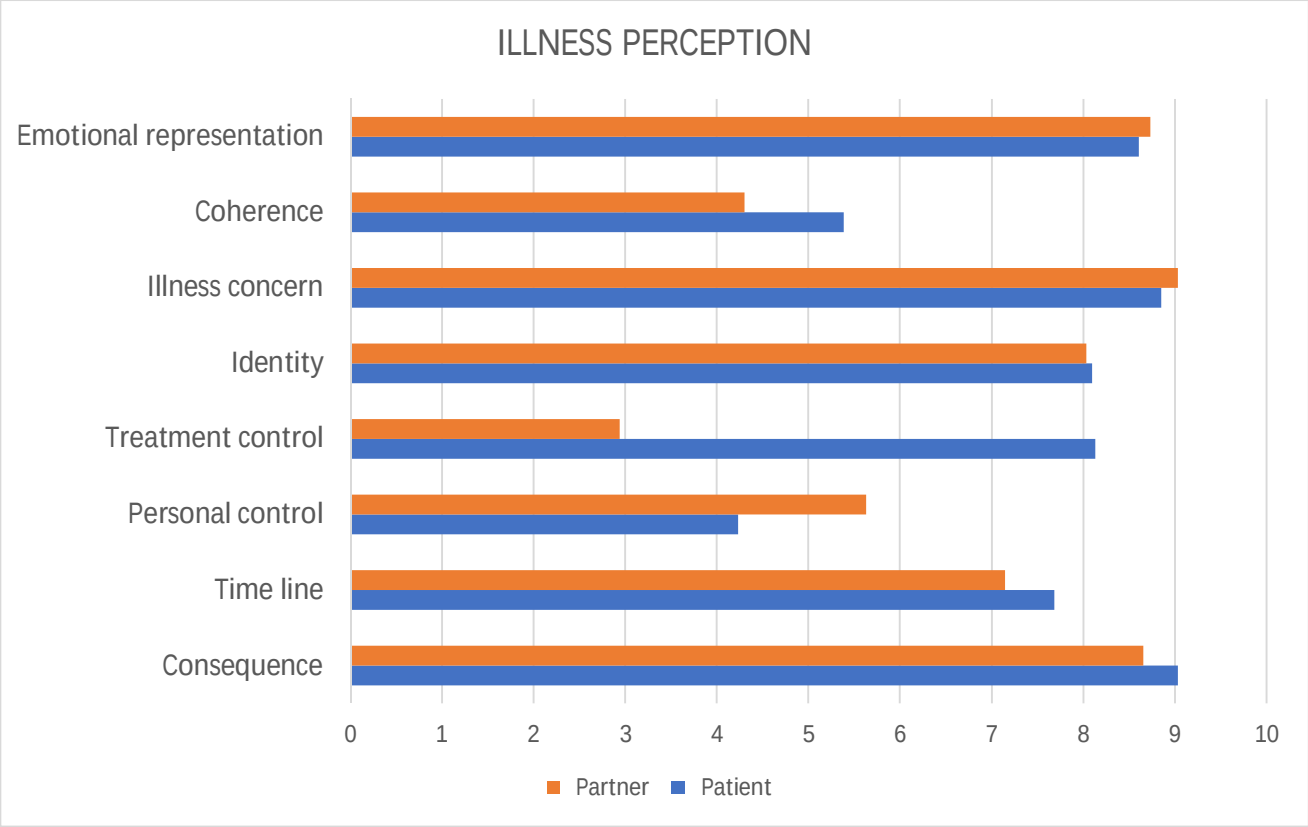
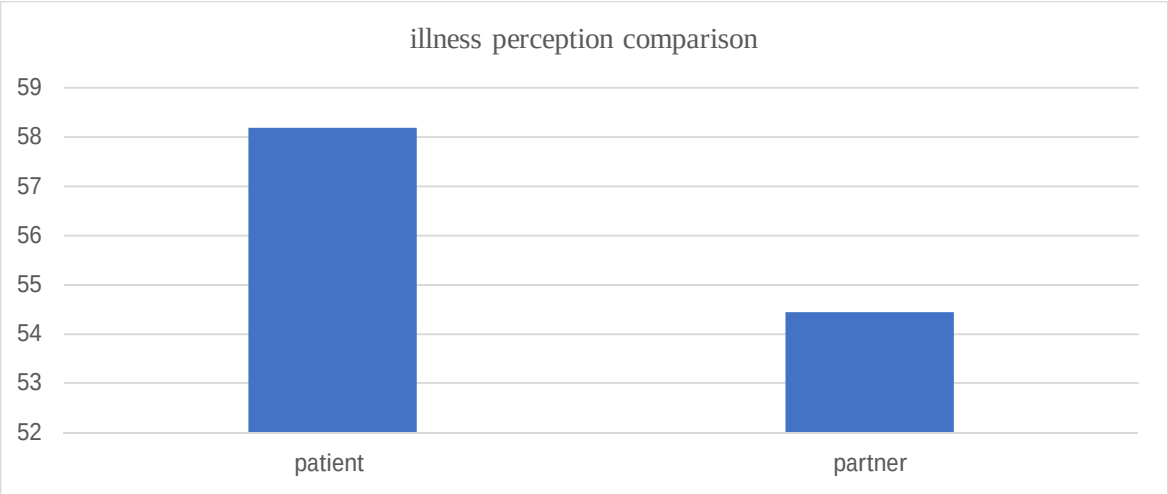


Figure 6

Comparison of illness perception total score between cancer patient and partner



The group of cancer patients has a higher illness perception total score (M=58.20) when compared to the Partner / spouse group (M=54.45)

There is a categorical question, causal item 9 that reports the most important factor that is believed to be the cause for illness by the respondent. Among the patient group, 33% (n=38) believed stress to be the cause for cancer, whereas, 20% (n=23) believed tobacco and other substance use may be the reason for cancer. Whereas, 17% (n= 20) reported improper diet as the cause for illness. Only 14% (n=16) have reported about having a family history of cancer. Around 12% (n= 14) patients were unable to answer, and responded as not known, remaining, 4% (n=4) patients or their partner said it is their destiny to get such a deadly disease.

The causal item is diagrammatically represented in the pie chart (Figure 7) given below.

Figure 7

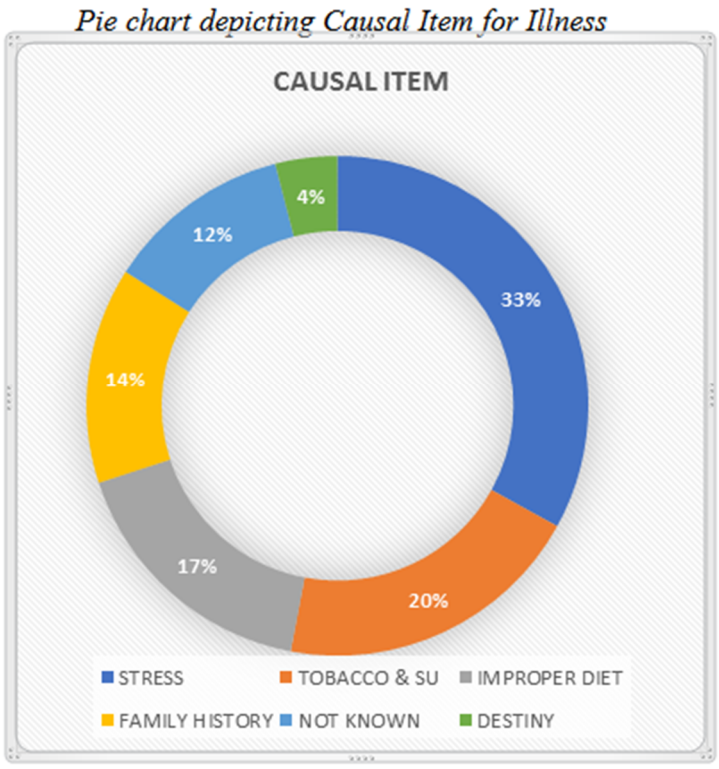


Figure 7 explains the causal item 9 that reports the most important factor that is believed to be the cause for illness by the respondent,

Intimacy in a Relationship

The intimacy shared by the couple is displayed in Table 9, and Figure 8 illustrates the differences in the levels of intimacy in dimensions, such as emotional, social, sexual, intellectual, recreational. A convenient scale is added as a dimension, which describes socially desirable answers given by the couples. The results explain there are similarities in the levels of intimacy such as social, intellectual, emotional and sexual intimacy, whereas, there is a difference in the levels of recreational intimacy observed between the cancer patient with a mean score of M=10.48 (SD=5.39) and partner with mean score of M=3.8 (SD=1.81).

Table 9

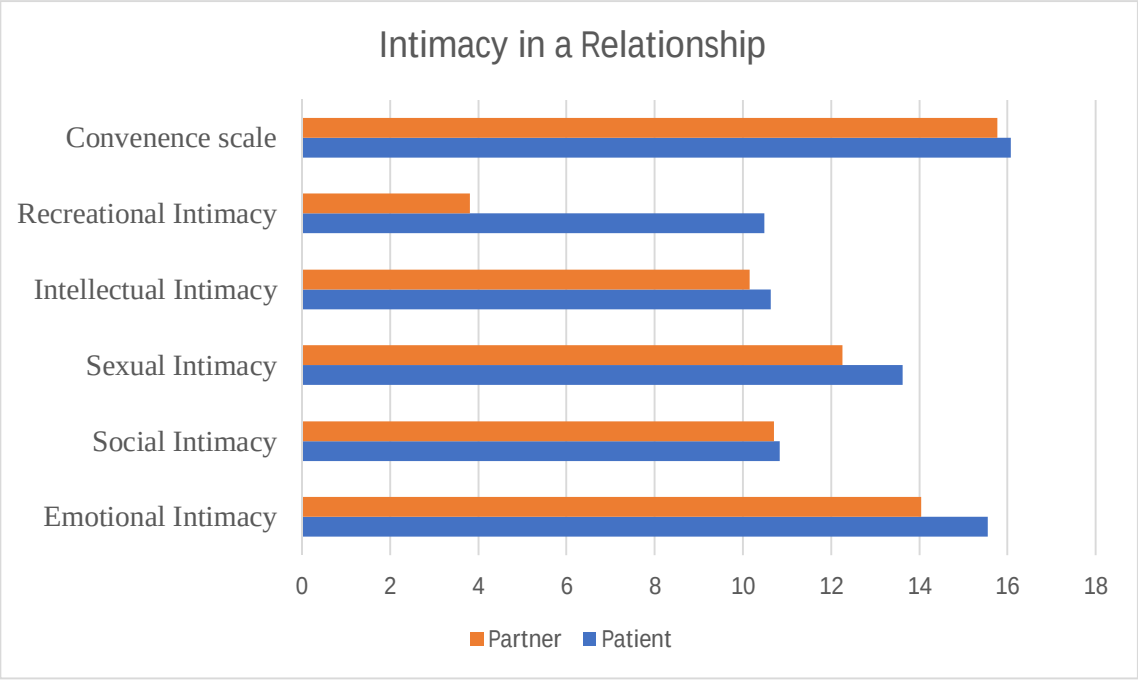
Mean value and standard deviation of dimensions of intimacy in patients diagnosed with cancer and their partners

Dimensions of intimacy	M (Patient)	SD	M (Partner)	SD
Emotional Intimacy	15.55	2.60	14.03	3.17
Social Intimacy	10.83	4.27	10.69	4.10
Sexual Intimacy	13.62	3.41	12.25	2.79
Intellectual Intimacy	10.62	3.47	10.14	2.76
Recreational Intimacy	10.48	5.39	3.81	1.81
Convenience scale	16.07	2.95	15.76	2.69

Note. *M= Mean values; SD= Standard Deviations*

Figure 8

Comparison of levels of Intimacy between the Patient & Partner group



Quality of Life

The four domains of quality of life are measured by the World Health Organization Quality of Life-BREF scale (WHOQOL-BREF): physical health, psychological, social relationships, and environment. A higher cumulative score denotes a higher quality of life. It is produced by adding scores for general health and overall quality of life, as well as scores from the four domains. The patient's overall Quality of Life score was found to be low in this study, with a mean score of 68.35 (S. D=11.56), when compared to the partner group with a mean score of 75.23 (S. D=9.61).

Table 10

Mean values of the dimensions of quality of life in patients with cancer and their partners

Dimensions of QoL	**M (Patient)**	**M (Partner)**
Quality of life	2.90	2.83
General health	2.80	3.5
Physical health	10.66	21.3
Psychological health	10.52	19.1
Social relationships	12.71	7.91
Environment	10.73	20.6
Total score	68.35	75.23

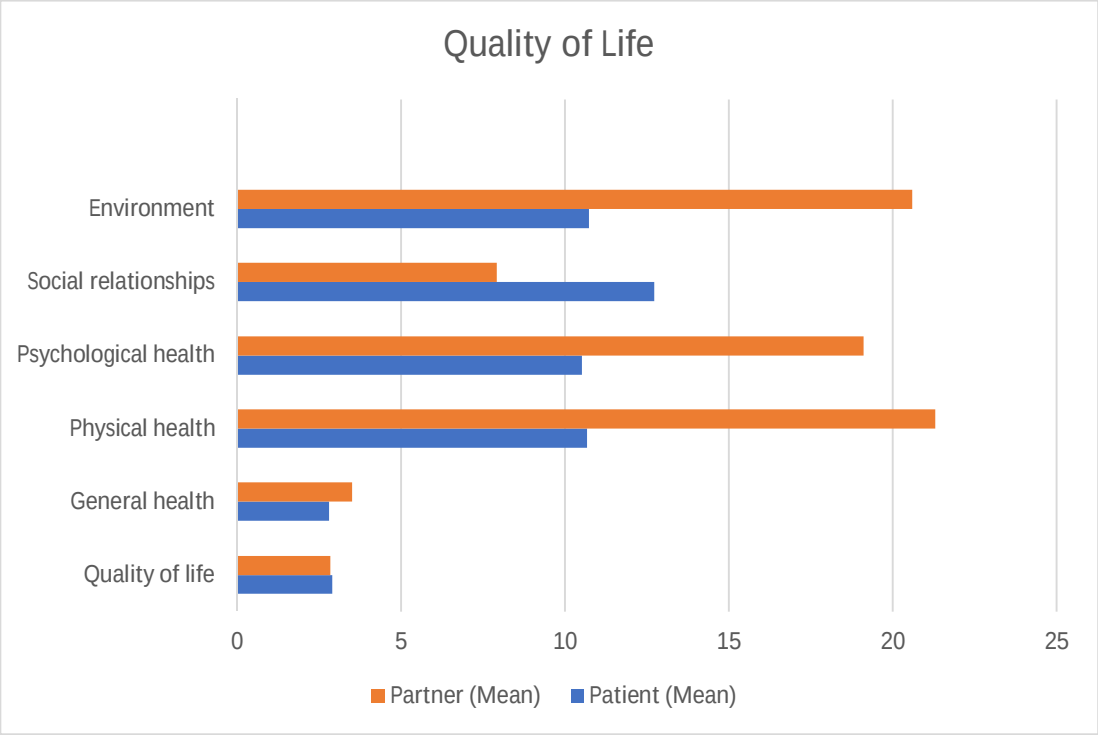
Note. M= Mean values; QoL= Quality of life

The result demonstrates clearly that partners have scored higher in majority of the dimensions with respect to items describing quality of life (overall quality of life, general health, physical, psychological and environment), but the cancer patients (M=12.71) have scored higher in social relationship when compared to partners (M=7.91).

Figure 9 illustrates the diagrammatic representation of the differences in the quality of life between the patient and partner.

Figure 9

Comparison of dimensions of Quality of life between the Cancer patient & partner group.



Sexual Functioning

Arizona sexual experience scale (ASEX) measures five phases of sexual response cycle: Drive, Arousal, Penile Erection in males/ Vaginal Lubrication in Females, Orgasm and Orgasm satisfaction. Total score is calculated by summing scores in each phase of the sexual cycle, and a higher score indicates severe sexual dysfunction. The instrument indicates to mark in the box if there is no sexual activity in past week, and not to attempt questions 4, and 5 that measures orgasm and orgasm satisfaction

Table 11

Mean scores of dimensions of sexual functioning in cancer patient and partners

Dimensions of Sexual functioning	**M (Patient)**	**M (Partner)**
Drive	4	3.28
Arousal	3.38	3.26
Penis Erection (Male)	3.68	3.05
Vaginal Lubrication (Female)	4.15	3.25
Orgasm	3.67	3.17
Orgasm satisfaction	3.33	3.15
Total score	12.35	10.35

Note. *M= Mean values*

The results show that the majority of the patients have reported sexual concerns, and expressed not being sexually intimate with each other. The patient score of sexual (dys)function is higher with a total mean score of 12.35, (SD=2.52) when compared to partner group having mean score of 10.35, (S.D = 2.35).

Figure 10

Comparison of dimensions of Sexual functioning between the Cancer patient & partner group.

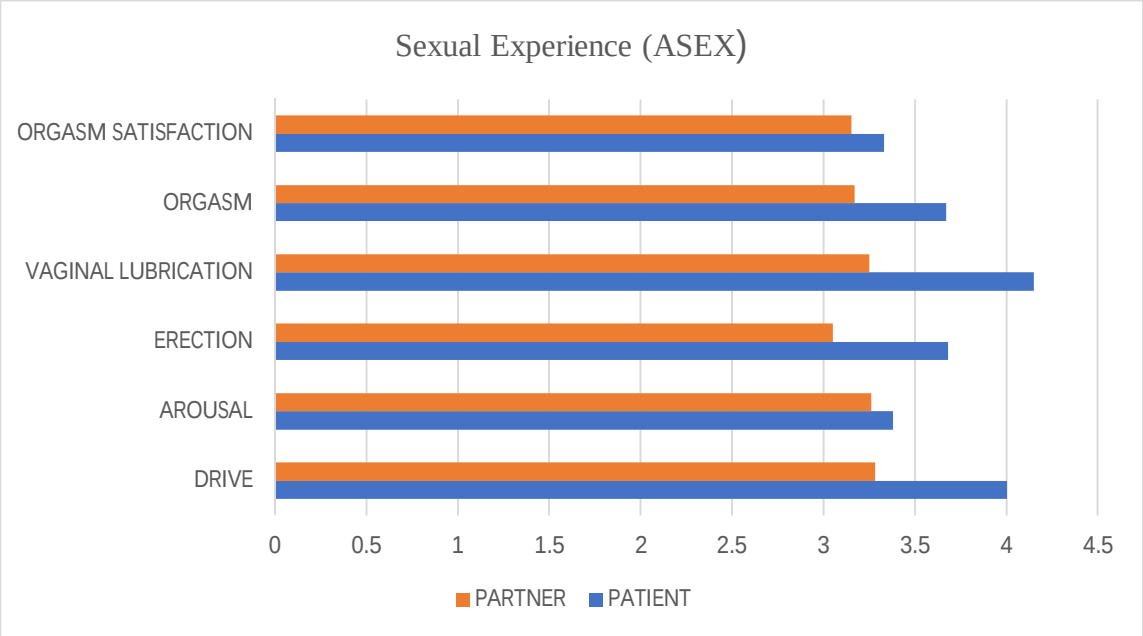


Figure 10 illustrates the results and comparison of the sexual functioning scores obtained by the patient and the partner.

Objective 2

The second objective is to study the relationship between the psychological states, body image perception, illness perception, intimacy in a relationship, quality of life and sexual functioning among cancer patients and their partners.

The correlation matrix is generated using Pearson's correlation method which is shown in table 12. The following section presents 3 segments with detailed description of the correlation among variables in the group of cancer patients, correlation in the group of spouses/ partners of cancer patients, followed by correlation between variables in cancer patients and spouse groups. There is a significant correlation established between the variables in patient group, partner group, as well as between the patient and partner variables (Table 12.1.12.2.12.3).

Table 12.1

The Correlation between the *dimensions of study variables among the Patients diagnosed with Cancer*

	PECOGPS	PDs	PDp	PAx	PSo	PBI	PIL	PEmR	PSoR	PSexR	PIntR	PRecR	PConR	PQOL	PSF
PECOGPS.	1	.253**	.155	.121	.365**	-.101	-.084	-.040	-.193*	-.223*	-.060	-.351**	-.140	-.515**	.200*
PDs		1	.700**	.675**	.620**	.301**	.235*	.197*	.243**	.117	.168	.208*	.169	-.415**	.074
PDp			1	.606**	.451**	.312**	.119	-.015	-.027	-.012	.142	-.035	-.007	-.475**	.118
Pax				1	.533**	.401**	.129	-.100	-.016	-.035	-.040	.000	-.133	-.483**	.021
PSo					1	.192*	-.023	.017	.068	.039	.130	.022	.035	-.360**	.229*
PBI						1	.111	.173	.197*	.179	.205*	.248**	.126	-.106	.013
PI							1	.154	.125	.105	-.002	.221*	.249**	.045	.067
PEmR								1	.645**	.559**	.625**	.504**	.703**	.211*	-.044
PSoR									1	.643**	.678**	.781**	.700**	.384**	-.061
PSexR										1	.536**	.579**	.629**	.322**	-.269**
PIntR											1	.517**	.603**	.224*	.096
PRecR												1	.630**	.520**	-.020
PConR													1	.339**	-.021
PQOL														1	-.067
PSF															1

Table 12.2

	SECOGPS	SDs	SDp	SAx	SSo	SBI	SIP	SEmR	SSoR	SsexR	SIntR	SRecR	SConR	SQoL	SSF
SECOGPS.	1	.034	.003	-.070	.307**	.048	-.038	-.133	-.003	-.053	.020	.130	-.057	-.125	.026
SDs		1	.649**	.729**	.426**	.244**	.297**	.125	.130	.053	.207*	.745**	.012	-.122	-.004
SDp			1	.550**	.249**	.102	.389**	.107	-.045	-.111	.011	.495**	-.071	-.359**	.024
Sax				1	.345**	-.033	.227*	-.052	-.081	-.190*	-.079	.515**	-.168	-.286**	.034
SSo					1	.134	.046	-.017	.001	-.072	.132	.597**	-.073	-.150	-.169
SBI						1	.194*	.322**	.602**	.486**	.432**	.395**	.487**	.438**	-.201*
SIP							1	.030	.065	-.040	-.050	.223*	.050	-.230*	-.092
SEmR								1	.247**	.440**	.324**	.196*	.421**	.226*	-.029
SSoR									1	.569**	.469**	.242**	.609**	.532**	-.182
SSexR										1	.427**	.120	.653**	.545**	-.042
SIntR											1	.310**	.522**	.444**	-.114
SRecR												1	.133	.013	-.054
SConR													1	.568**	-.128
SQOL														1	-.106
SSF															1

The Correlation between the dimensions of study variables among the Partners of Patients diagnosed with Cancer

Table 12.3

Correlation of the dimensions of study variables between Patients diagnosed with Cancer and their Partners

Correlations

	PPS	PDs	PDp	Pax	Pso	PBI	PIL	PEmR	PSoR	PSexR	PIntR	PRecR	PConR	PQOL	PSF	SPS	SDs	SDp	Sax	Sso	SBI	SIP	SEmR	SSoR	SsexR	SIntR	SRecR	SConR	SQoL	SSF
PPS	1	.253**	0.155	0.121	.365**	-0.101	-0.084	-0.040	-.193*	-.223*	-0.060	-.351**	-0.140	-.515**	.200*	0.061	-0.073	0.160	-0.051	0.025	-0.166	.226*	-0.080	-0.094	-.192*	-0.174	-0.065	-0.128	-.220*	-0.031
PDs		1	.700**	.675**	.620**	.301**	.235*	.197*	.243**	0.117	0.168	.208*	0.169	-.415**	0.074	-0.009	.247**	.332**	0.097	0.111	.366**	.351**	0.152	.394**	.316**	.255**	.246**	.362**	0.070	-0.055
PDp			1	.606**	.451**	.312**	0.119	-0.015	-0.027	-0.012	0.142	-0.035	-0.007	-.475**	0.118	-0.050	.233*	.336**	0.102	0.131	.233*	.235*	0.137	.247**	.186*	0.158	.237*	0.158	-0.027	-0.060
Pax				1	.533**	.401**	0.129	-0.100	-0.016	-0.035	-0.040	0.000	-0.133	-.483**	0.021	-0.110	0.091	.261**	0.080	0.003	.247**	.311**	0.063	0.180	0.093	0.093	0.075	0.085	-0.067	-0.020
PSoR					1	.192*	-0.023	0.017	0.068	0.039	0.130	0.022	0.035	-.360**	.229*	-0.050	0.170	.193*	0.052	0.176	.204*	.241**	0.126	0.176	0.167	.252**	0.169	.210*	0.043	-0.022
PBI						1	0.111	0.173	.197*	0.179	.205*	.248**	0.126	-0.106	0.013	-0.142	-0.033	0.049	-0.084	0.035	.478**	.189*	0.136	.220*	.249**	0.139	0.099	.307**	.201*	-0.128
PIL							1	0.154	0.125	0.105	-0.002	.221*	.249**	0.045	0.067	-0.084	.242**	.196*	0.162	-0.050	0.130	0.136	0.142	0.087	0.161	0.060	0.100	0.176	0.094	0.017
PEmR								1	.645**	.559**	.625**	.504**	.703**	.211*	-0.044	0.062	.223*	0.056	-0.001	0.128	.583**	-0.055	.252**	.481**	.367**	.419**	.439**	.448**	.432**	-0.177
PSoR									1	.643**	.678**	.781**	.700**	.384**	-0.061	-0.158	.217*	-0.069	-0.021	0.025	.580**	-0.024	.331**	.622**	.524**	.490**	.357**	.632**	.615**	-0.152
PSexR										1	.536**	.579**	.629**	.322**	-.269**	-0.113	.306**	0.031	0.133	0.176	.460**	0.014	.203*	.510**	.377**	.513**	.450**	.441**	.360**	-0.152
PIntR											1	.517**	.603**	.224*	0.096	-0.020	0.127	-0.043	-0.133	0.119	.602**	-0.031	.264**	.528**	.376**	.502**	.362**	.469**	.560**	-.217*
PRecR												1	.630**	.520**	-0.020	-0.103	0.168	-0.081	-0.056	-0.063	.480**	-0.024	.306**	.572**	.586**	.470**	.244**	.645**	.598**	-0.062
PConR													1	.339**	-0.021	-0.017	.216*	-0.069	-0.084	-0.019	.506**	-0.138	.281**	.516**	.415**	.502**	.328**	.500**	.541**	-.216*
PQOL														1	-0.067	0.048	-0.059	-.359**	-0.091	-0.056	0.077	-.304**	0.129	0.137	.270**	.228*	-0.026	.325**	.489**	0.015
PSF															1	.186*	-0.101	-0.034	-.237*	-0.082	0.081	-0.014	.212*	-0.002	0.105	-0.065	-0.154	0.023	0.082	.268**
SPS																1	0.034	0.003	-0.070	.307**	0.048	-0.038	-0.133	-0.003	-0.053	0.020	0.130	-0.057	-0.125	0.026
SDs																	1	.649**	.729**	.426**	.244**	.297**	0.125	0.130	0.053	.207*	.745**	0.012	-0.122	-0.004
SDp																		1	.550**	.249**	0.102	.389**	0.107	-0.045	-0.111	0.011	.495**	-0.071	-.359**	0.024
Sax																			1	.345**	-0.033	.227*	-0.052	-0.081	-.190*	-0.079	.515**	-0.168	-.286**	0.034
Sso																				1	0.134	0.046	-0.017	0.001	-0.072	0.132	.597**	-0.073	-0.150	-0.169
SBI																					1	.194*	.322**	.602**	.486**	.432**	.395**	.487**	.438**	-.201*
SIP																						1	0.030	0.065	-0.040	-0.050	.223*	0.050	-.230*	-0.092
SEmR																							1	.247**	.440**	.324**	.196*	.421**	.226*	-0.029
SSoR																								1	.569**	.469**	.242**	.609**	.532**	-0.182
SsexR																									1	.427**	0.120	.653**	.545**	-0.042
SIntR																										1	.310**	.522**	.444**	-0.114
SRecR																											1	0.133	0.013	-0.054
SConR																												1	.568**	-0.128
SQoL																													1	-0.106
SSF																														1

(A) Correlation among variables in the group of patients diagnosed with cancer

Among the patient group, there is a significant positive correlation found between ECOGPS with distress (r = .25, p < .01), somatization (r = .36, p < .01), and sexual functioning (r = .20, p < .001). There exists a significant negative correlation between ECOGPS and social intimacy, (r=-.193, p < .01), sexual intimacy (r=- .223, p < .01) and recreational intimacy (r= -.351, p < .01). This explains that as the values in performance scale increase (which indicates poor functionality), there is a decline in the scores of social, sexual and recreational intimacy in a step ladder manner.

There is a significant negative correlation between ECOGPS and quality of life among the patient group (r=-.515. p < .001. There is a strong positive correlation between psychological states such as distress, depression, anxiety and somatization. There is a positive correlation between psychological states and body image; the highest correlation is seen between anxiety and body image (r=. 401, p < .001) followed by depression and body image (r=.312, p < .001) and distress and body image (r=.301, p < .001). There is a correlation found between somatization and body image (r=.192, p < .01) in the patient group, p is significant at 0.05 level.

There is a significant negative correlation found between psychological states of cancer patients and their quality of life. The highest correlation is found between depression and patient quality of life (r=-.475, p < .001), followed by anxiety (r=-0.433, p < .001), distress (r=-.415. p < .001), and somatization (r=-.360, p < .001) among the patient group. This explains that higher the score of psychological states such as depression, anxiety, distress and somatization, lower is the quality of life among the patients diagnosed with cancer.

There is a positive correlation found between the psychological state distress and illness perception (r=0.235, $p < .01$), which rationalises higher the patient perceives their illness as threatening, higher will be their distress levels.

Among the dimensions of relationship, there is a significant positive correlation established between patient distress and social intimacy (r=. 243, $p < .01$), followed by recreational intimacy (r=.208, $p < .001$) and emotional intimacy (r=0.197, $p < .01$). Distress increases intimacy in the patients diagnosed with cancer, however, there is no significant relationship seen between psychological states and sexual intimacy.There is a correlation between distress and sexual experience (r=.229, $p < .01$), p significant at 0.05 level. Here, Arizona sexual experience score indicates sexual dysfunction. This explains higher the level of distress among the patients, higher will be the sexual dysfunction.

There is a positive correlation found between body image and intimacy of cancer patients, highest correlation seen with recreational intimacy (r=.243, $p < .001$), followed by intellectual intimacy (r=.205, $p < .01$) and social intimacy (r=.197, $p < .01$). There is no significant correlation found between body image with emotional or sexual intimacy. Likewise, there is a positive correlation seen between illness perception of patients with recreational intimacy (r=0.221, $p < .01$) . Also, there exists a significant correlation between illness perception and convenience scale (r=.249, $p < .01$), which measures socially desirable responses to the questionnaire.

Emotional intimacy of patients shows a positive correlation with quality of life (r=.211, $p < .01$) which explains better the emotional intimacy, better will be the quality of life among patients diagnosed with cancer. There is a significant negative correlation between sexual intimacy and total score of sexual experience (r=-.286, $p < .001$). High score of sexual experience indicates high sexual dysfunction. This explains that as sexual

intimacy decreases among cancer patients, the sexual dysfunction increases and vice versa.

(B). **Correlation among the variables in Partners / Spouses of Cancer patients**

There is a significant positive correlation between ECOGPS (Performance scale) and somatization in the spouse group (r=.307, $p < .001$). This explains that as the ECOGPS scores increase (which indicates low functionality), somatisation increases in the partner/spouse group and vice versa.

There exists a significant positive correlation between distress and body image (r=.244, $p < .001$), which explains that higher would be the distress levels in the partner, when the partner perceives body image perception of the patient as more threatening. A significant positive correlation is found between psychological states and illness perception, the highest correlation seen between depression and illness perception (r=.389, $p < .001$), followed by distress (r=.297, $p < .001$) and anxiety (r=.227, $p < .01$). Thus, higher the levels of depression, distress or anxiety in the partner/spouse, the partner perceives illness perception of the patient as more threatening would also be higher, and vice versa.

There is a significant positive correlation between psychological states and intimacy among spouses/partners of cancer patients. Distress shows significant correlation with recreational intimacy (r=.745, $p < .001$) and intellectual intimacy (r=.207, $p < .001$)**.There is positive correlation seen between depression and recreational intimacy (r=.495, $p < .001$), anxiety and recreational intimacy (r=.515, $p < .001$), somatization and recreational intimacy (r=.597, $p < .001$).

There is a negative correlation seen between psychological states and quality of life in the spouse /partner group. Depression shows highest correlation (r=-.359)**, followed by anxiety (r=-.298, $p < .001$). This explains that when anxiety and depression states are higher among the partners of cancer patients, there is a decline in their quality of life. The quality of life significantly improves when the anxiety and depression levels are low.

There exists a positive correlation between body image of partner (perception of partner about how patient feels about their body image) with distress levels of spouse (r=.244, $p < .001$), illness perception (r=.194, $p < .01$), and quality of life (r=.438, $p < .001$). All the dimensions of relationship/ intimacy are positively correlated with body image perception of partner, the highest correlation is found between body image and social intimacy (r=.602, $p < .001$), followed by convenience scale (r=.487, $p < .001$), and sexual intimacy (r=.486, $p < .001$).

Illness perception of partner is positively correlated with psychological states such as anxiety (r=.227, $p < .01$), distress (r=.297, $p < .001$) and depression (r=.389, $p < .001$). This explains that higher the psychological states in the partner, higher would be the partners perception about the illness perception. There is a positive correlation between illness perception and body image perception among the partner group (r=.194, $p < .01$). And as the illness perception of a partner increases, the body image perception also increases, and vice versa. This explains that the more the partner perceives the illness perception of the patient as threatening, the partners would perceive higher body image issues of patients.

There is a significant negative correlation between illness perception of partner and quality of life (r=-.230, $p < .01$), which explains that higher the partner perceives illness as threatening by the patient, lower would be the quality of life and vice versa.

There is a significant positive correlation between all the dimensions of relationship such as emotional (r=.226, $p < .01$), intellectual (r=.444, $p < .001$), social (r=.532, $p < .001$), and sexual intimacy (r=.545, $p < .001$) with the quality of life among the aapartner group. The conventional scale that measures socially desirable responses for the intimacy questionnaire is also found to be significantly high (r=.568, $p < .001$).

There exists a significant negative correlation between quality of life and psychological states such as depression (r=-.359, $p < .001$) and anxiety (r=-.286, $p < .001$). This explains as the distress and anxiety levels increase in the partner group, the quality of life decreases and vice versa.

Illness perception of partner is negatively correlated with quality of life (r=-.230, $p < .01$), which explains that when the partner perceives the illness as threatening by the patient, the quality of life is negatively affected. There is a positive correlation found between body image perception and quality of life (r=.438, $p < .001$) among partners.

Quality of life is positively correlated with all the dimensions of intimacy among the partners such as emotional intimacy (r=.226, $p < .01$), intellectual intimacy (r=.444,) $p < .001$, social intimacy (r=.532, $p < .001$), sexual intimacy (r=.545, $p < .001$) and conventional scale (r=.568, $p < .001$). As intimacy improves, the quality of life also improves significantly.

There is a positive relationship between body image perception and sexual functioning among the partner (r=.201, $p < .01$). Higher the body image perception of the

partner, higher would be the total scores of sexual functioning (indicates higher sexual dysfunction). This explains that as a partner perceives higher body image issues of a patient, the sexual dysfunction among partners will also be on the higher side.

(C) Correlation among the variables in Cancer patients and Partners

ECOGPS of patient shows positive correlation with illness perception of partner (r=0.226, $p < .01$). This indicates that when there is an increase in value of performance scale which in turn indicates poor functionality, the partner perceives that patient illness perception of disease is more threatening. Whereas, there exists a negative correlation between patient ECOGPS with sexual intimacy of partner (r=-.192, $p < .01$) as well as quality of life of partner (r=-.220, $p < .01$). This indicates that when the performance score of a patient increase, which indicates poor functionality, the sexual intimacy and quality of life of the spouse decreases and vice versa.

There is a significant correlation between psychological states of patient and partner (spouse). Highest correlation is found between depression of patient and partner (r=.336, $p < .001$), followed by distress of patient and depression of partner (r=.332, $p < .001$) , anxiety of patient and depression levels of spouse (r=. 261, $p < .001$), distress of patient and distress of partner (r=.247, $p < .001$), depression of patient and distress of partner (r=.233, $p < .01$). The positive relationship between psychological states of patient and partner explains that with an increase in distress, depression and anxiety levels in patients, there is relative increase in the partners' distress and depression levels.

There is a significant positive correlation between psychological distress of patient and body image perception of partner (r=.366, $p < .001$) which explains that when the psychological distress of patient is high, the partner perceives body image perception of patient as high. Likewise, positive correlation exists between psychological distress of

patient and illness perception of partner (r=.361, $p < .001$). It indicates that when the levels of psychological distress of the patient is high, the perception of partner about the patient illness perception of as threatening is also higher.

There is a significant positive correlation between depression score of patients with body image perception of partner (r=.233, $p < .01$), and illness perception of partner (r=.235, $p < .01$). This indicates that as the level of depression increases in patient, the perception of partner about body image perception and illness perception of patient is higher and vice versa. Patient anxiety levels are also positively correlated with spouse perception of body image of patient (r=. 247, $p < .001$) and spouse perception of illness perception in patient (r=.311, $p < .001$). Also, Patient somatisation is positively correlated with spouse perception of body image of patient (r=.204, $p < .001$) and spouse perception of illness perception of patient (r=.241, $p < .001$). This explains that higher the anxiety and somatisation values of patient, the partner's perception of body image and illness perception of patient would be higher.

There exists a significant positive correlation between psychological states of patient and relationship dimensions of the partner. This explains that with an increase in levels of psychological states (indicating psychological problems) in patient, the relationship intimacy of spouse increases. The highest correlation is seen between distress levels in patients and partners' social intimacy (r=.394, $p < .001$), followed by convenience scale (r=.362, $p<.001$), sexual intimacy (r=.316, $p < .001$), intellectual intimacy (r=.256, $p < .001$) and recreational intimacy (r=.246, $p < .001$).Similarly, there is a positive correlation between depression of patient with partners' social intimacy (r=.247, $p < .001$) and recreational intimacy (r=.237, $p < .001$). Likewise, somatisation in patient is positively correlated with intellectual intimacy (r=.252, $p < .001$) and convenience scale (r=.210, $p <$

.01) of partner. Convenient scale measures socially desirable answers in the personal assessment of intimacy in relationship scale.

There is a significant positive correlation between body image of patient and partners' perception of body image (r=.478, $p < .001$), which indicates that when the patient reports high body image issues, the partner(spouse) also perceives higher body image perception of the patient. Similarly, the patient body image is also positively correlated with illness perception of spouse (r=.189, $p < .01$) which explains that when patients report high (severe) body image issues, the perception of the partner about patients' illness perception as more threatening is also high and vice versa.

There is a significant positive correlation between body image of patient and intimacy of partner such as social intimacy (r=.220, $p < .01$), sexual intimacy (r=.249, $p < .001$) and conventional scale scores highest value (r=.307, $p < .001$). Likewise, there's a positive correlation between body image of patient and quality of life of partners (r=.201, $p < .01$).

There is a positive correlation between illness perception of patient and psychological states of partner such as distress (r=.242, $p < .001$) and depression (r=.196, $p < .01$) which indicates that when the patient perceives illness as more threatening, there is an increase in the levels of distress and depression in the partner group.

The quality of life of patient is negatively correlated with depression levels of partner (r=-.359, $p < .001$). This explains that when the quality of life of a patient decrease, the partners' depression levels increase and vice versa. Likewise, patient quality of life is negatively correlated with illness perception of spouse (r=-.304, $p < .001$), which explains that the quality of life of patient decreases when the partner perceives the illness perception of the partner as more threatening. This indicates that the Quality of life of

patients are negatively influenced by psychological states and illness perception of partners.

The patient quality of life is positively correlated with sexual intimacy of partner (r=0.270, $p < .01$) which explains that with an increase in the sexual intimacy reported by partner(spouse), there would be an increase in the quality of life of the patient. There exists a significant positive correlation between patient quality of life and spouse quality of life (r=.489, $p < .001$), which indicates that when the quality of life of a patient improves, there is a relative improvement in the quality of life of the partner (spouse) and vice versa.

There is a positive correlation between patient emotional intimacy and partner Quality of life (r=.432, $p < .01$). This explains that as the emotional intimacy increases in patients, the quality of life improves in partners. There is a positive correlation between patient sexual functioning and spouse sexual functioning (r=.268, $p < .001$), which explains that when sexual dysfunction of a patient increases, the sexual dysfunction of spouse also increases, and vice versa. There is a positive correlation seen between spouse ECOGPS and sexual experience of patients (r=.186, $p < .01$). Here higher ECOGPS score indicates lower functionality and higher sexual experience score indicates severe sexual dysfunction. This explains with an increase in ECOGPS of partners, the sexual dysfunction of patients also increases.

There is a significant positive correlation between the psychological states of the partner (spouse) with the patient, which explains that as the psychological states (such as distress and depression) increases in the spouse, the psychological states relatively increase in the patient as well. The psychological distress of spouse is positively correlated with patients' distress (r=.247, $p < .001$)**, depression (r=.223, $p < .01$), illness

perception (r=0.242, $p < .001$), emotional intimacy(r=.223, $p < .001$), social intimacy (r=.217, $p < .01$), sexual intimacy(r=.306, $p < .001$), as well as convenience scale (r=.216, $p < .01$), which measures social desirable answers in the patients. Likewise, the depression levels of spouse is positively correlated with patients' distress (r=.332, $p < .001$), depression (r=.336, $p < .001$), anxiety (r=.261, $p < .001$) and somatisation (r=.193, $p < .01$), which explains that as the patent distress, depression, anxiety or somatisation increases, there would be an increase in depression level among the partner or spouse.

The depression levels in spouse is found to be correlated with illness perception of patient (0.196) *, and negatively correlated with quality of life of patient (r=-.359, $p < .001$). As the illness perception of patient is high, the depression levels also increase in the spouse. Higher the depression levels in spouse, lower the quality of life of patient and vice versa. Anxiety levels of spouse is negatively correlated with sexual functioning of patients (r= -.237, $p < .001$).

The body image perception of partner is seen to be positively correlated with patients' distress (r=.366, $p < .001$), depression (r=.233, $p < .01$), anxiety (r=.247, $p < .01$) and somatisation (r=.204, $p < .01$). This explains when the perception of partner about the body image of patient is more, the distress, depression and anxiety levels of patient also increases. There is a significant positive correlation found between Partners' body image and Patients' illness perception (r=.478, $p < .001$), which explains that when the perception of partner about body image issues of patient is more, the patient also perceives illness experience as more threatening.

There is a positive correlation between illness perception of partner(spouse) and ECGOPS of patient (r= .226, $p < .01$). This explains that as there is an increase in ECOGPS scores in patient (which indicates low functionality), the perception of partner

about patients' illness perception as threatening would also be high. The partners' illness perception is positively correlated with psychological states of patient, the highest correlation is seen with patients' distress levels (r=.351, $p < .001$), followed by anxiety (r=.311, $p < .001$) and somatisation (r=.241, $p < .001$) and depression (r=.235, $p < .01$).

There is a positive correlation between partners' illness perception and patients' body image, which explains that when the perception of partner about patients' illness perception is severe, the body image issues of patient is likely to increase. Whereas, a negative correlation between partner's illness perception and patient's quality of life explains that when the perception of partner about patients' illness perception is high, the quality of life of patient is low.

All the dimensions of relationship (intimacy), including the convenience scale (added to measure the socially desirable answers to the questionnaire) shows a significant correlation between patient and partner (spouse), where p is found to be significant at 0.01 level. The highest correlation found between social intimacy of partner with patients' social intimacy (r=.622, $p < .001$), recreational intimacy (r=.572, $p < .001$), intellectual intimacy(r=.528, $p < .001$), sexual intimacy (r=.510, $p < .001$), emotional intimacy (r=.481, $p < .001$); followed by Intellectual intimacy of partner with patients' sexual intimacy (r=.513, $p < .001$), intellectual intimacy (r=.502, $p < .001$), social intimacy (r=.490 $p < .001$). A positive correlation is seen between recreational intimacy of partner with patients' sexual intimacy (r=.450, $p < .001$), emotional intimacy (r=.439, $p < .001$), intellectual intimacy (r=.362, $p < .001$), social intimacy (r=.357, $p < .001$) and recreational intimacy (r=.244, $p < .001$).

There is significant correlation found between sexual intimacy of partner with patients' s recreational intimacy (r=.586, $p < .001$), social intimacy (r=.524, $p < .001$), and

sexual intimacy (r=.377, $p < .001$); followed by emotional intimacy of partner with patients' social intimacy (r=.331, $p < .001$), recreational intimacy (r=.306, $p < .001$), intellectual (r=.264, $p< .001$) as well as emotional intimacy (r=.25, $p < .001$).

There is a positive correlation between partners' emotional intimacy and patients' sexual functioning; Partners' sexual intimacy and patients' quality of life; Partners' intellectual intimacy and patients' quality of life. The partner (spouse) quality of life is also positively correlated with all the dimensions of intimacy in the patient, the highest correlation is seen between social intimacy (0.615) **, recreational intimacy (r=.598, $p < .001$), intellectual intimacy (r=-.560, $p < .001$), emotional intimacy (r=.432, $p < .001$), and sexual intimacy (r=.360, $p < .001$).The sexual experience of partner (spouse) is found negatively correlated with intellectual intimacy(r= - 0.217, $p < .01$)*. There is a significant correlation between patient quality of life and patient quality of life (r=.489, $p < .001$); partner sexual experience and patient sexual experience (r=.268, $p < .001$).

The correlation analysis explains that there is a significant relationship between the variables such as psychological state, body image, illness perception, intimacy, sexual experience and quality of life between the partner and patient group.

Further, t-Test is performed by collecting data from the patient and partners are paired together (as a couple). The dyad, being a couple, will share common experiences (such as psychological states, body image, illness perception, intimacy, quality of life and sexual functioning) and may have common factors (may be hidden) in the responses of the patient and the partner. Hence, it is decided to carry out the scoring patterns of the patient's and partner's dimensions and further analysis by using a paired t-test.

Table 13

Summary of Paired t- test to ascertain the requirement for psychological intervention for both Cancer patients and partners

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PECOGPS – SECOGPS	1.078	.739	.069	.942	1.215	15.642	114	.000
Pair 2	Pdistress – Sdistress	4.122	6.590	.614	2.904	5.339	6.708	114	.000
Pair 3	PDepression– Sdepression	1.409	2.756	.257	.900	1.918	5.482	114	.000
Pair 4	PAnxiety – Sanxiety	3.452	4.109	.383	2.693	4.211	9.010	114	.000
Pair 5	PSomatisation – Ssomatisation	8.209	5.330	.497	7.224	9.193	16.515	114	.000
Pair 6	PBITotal – SBITotal	1.678	5.648	.527	.635	2.722	3.186	114	.002
Pair 7	PIPTotal – SIPTotal	3.748	5.401	.504	2.750	4.746	7.441	114	.000
Pair 8	PEmR – SemR	1.513	3.562	.332	.855	2.171	4.555	114	.000
Pair 9	PSoR – SsoR	.130	3.643	.340	-.543	.803	.384	114	.702
Pair 10	PSexR – SsexR	1.365	3.498	.326	.719	2.011	4.186	114	.000
Pair 11	PIntR – SintR	.478	3.174	.296	-.108	1.065	1.616	114	.109
Pair 12	PRecR – SrecR	6.670	5.258	.490	5.698	7.641	13.603	114	.000
Pair 13	PConR – SconR	.304	2.832	.264	-.219	.828	1.152	114	.252
Pair 14	PQOLTotal – SqoLTotal	-6.887	10.834	1.010	-8.888	-4.886	-6.817	114	.000
Pair 15	PSFTotal – SSFTotal	2.000	2.950	.275	1.455	2.545	7.271	114	.000

The results show that all the variables may have hidden common factors in the responses of the patient and partner, and are paired together (as a couple). Hence, it is decided to carry out the scoring patterns of the patient's and partner's different dimensions analysed by using a paired t-test. Paired t-test (Table 13) shows significant mean differences for the variables, excluding the mean differences for social intimacy (t=0.384, p value=0.70), intellectual intimacy (t=1.616, p=.109), and convenience scale (t=1.152, p=.252), where p values are not significant.

A statistically significant correlation is seen between the dimensions of patient and spouse explaining that there are no variances found between the patient and partner variables. Hence, regression analysis or predictive analysis is the next step followed in Inferential statistics. Multiple linear regression analysis is done including all the dimensions of patient and partner, (independent variables such as psychological states, body image, illness perception, and relationship) which are important in predicting the dependent variables (Quality of life and sexual experience). Step down regression method is followed, in which backward elimination begins by including all the independent variables that may predict the dependent variable, and removing the least significant one at each step until a stable set of variables is attained.

i) The objective of Regression analysis is to predict Patient Quality of life (dependent variable) with the independent variables such as patients' ECOGPS, psychological states, body image, illness perception and relationship or intimacy. To check the contributors (predictor), step down regression method is followed, where in the presence of other variables, the least contributing variable (which is dispensable and not found significant) is removed one by one as these variables do not seem to contribute to the patient's quality of life. The model shows R^2 value of 62.5% and the independent

variables(predictors) that show significance, and predict the quality of life (criterion) are Patients' ECOGPS (Performance scale) B= -4.229, p value=.001; Patient Distress with B= -0.595, p=0.002; Patient Anxiety with B= -0.891, p=.001 and Patient Recreational intimacy with B= 1.060, p=.000. This explains that decrease in performance score (PECOGPS), which indicates better function ability in patients, predicts Quality of life in the patient. Likewise, distress and anxiety in patients show negative value, which explains that the greater the distress and anxiety, lower the quality of life predicted in the patient group. Whereas recreational intimacy in the patient is positively related and shows significance, which predicts that the better the recreational intimacy (social aspect) in the patient, the better would be the quality of life of the patient, and vice versa.

Further, by adding the spouse-independent variables to it, and following step-down regression method, where in the presence of other variables, the least contributing variable (which is dispensable and not found significant) is removed one by one as these variables do not seem to contribute to the patient's quality of life. The results show that the model has R^2 value of 64.1% and the independent variables (predictors) that show significance, and predict the quality of life (criterion) are Patients' ECOGPS (Performance scale) B= -5.063, p value=.000; Patient Depression with B= -0.796, p=0.012; Patient Anxiety with B=-0.990, p=.001; Patient Recreational intimacy with B= 0.862, p=.000 and Spouse/ Partner Depression with B= -0.879, p value=0.025.

This explains lower levels of negative psychological states predict a better quality of life for the couple. Spouse depression emerged as an important predictor for Patient Quality of life. Thus, not only the psychological states of the patient but also the spouse to be considered carefully to develop an intervention in order to improve the Quality of life of the patient.

Table 14

Summary of the Model for predicting Quality of life in Cancer patients using Hierarchical Multiple regression analysis

	B	SEB	B	t	R^2	ΔR^2
Model 1						
(C=81.686; F=45.74)						
Patient ECOGPS	-4.229	1.200	-0.239	-3.526	**0.625**	0.611
Patient Distress	-0.595	0.191	-0.277	-3.121		
Patient Anxiety	-0.891	0.273	-0.267	-3.263		
Patient Recreational Intimacy	1.060	0.146	0.495	7.255		
Model 2						
(C=81.175; F=38.85)						
Patient ECOGPS	-5.063	1.104	-0.286			
Patient Depression	-0.796	0.312	-0.190			
Patient Anxiety	-0.990	0.242	-0.297	-4.585	**0.641**	0.624
Patient Recreational Intimacy	0.862	0.132	0.402			
Spouse depression	-0.879	0.387	-0.387			

Note. 1. B=Unstandardized beta coefficient, SEB=Standard Error of Beta, β= Standardized beta coefficient, t=t-test, R2= Variance, C=Constant, F=F statistic
*2. *= p<.05, **= p<.01, ***= p<.001.*

ii) The next objective of regression analysis is to predict the Spouse/Partners Quality of life (criterion/dependent variable) with the independent variables (predictors) such as Spouse performance scale (function ability), psychological states, body image, illness perception, relationship/ intimacy. To check the contributors (predictor), step down regression method is followed, where in the presence of other variables, the least contributing variable (which is dispensable and not found significant) is removed one by one as these variables do not seem to contribute to the patient's quality of life. The model

shows R^2 value of 53.3% and the independent variables (predictors) that show significance, and predict the Spouse quality of life (criterion) are Spouse' Depression B= -1.43, p value= 0.000; Spouse Body image with B= -0.460, p=0.001; Spouse illness perception with B= -0.388, p=.008 and Spouse Social intimacy with B= 0.457, p=.036; Spouse convenience scale B=1.178, p=0.000

The psychological state such as depression in the spouse having a negative value explains that lower the levels of negative psychological states such as depression in the spouse, better would be the spouse quality of life. Apart from this, Spouse's perception of patient's body image perception and illness perception also shows significance. Spouse's body image perception by the partner may indicate bias. Majority of patients are females, and there are a lesser number of male patients in the study. When males are the spouses (and primary caregivers), there is a possibility that females (such as a breast cancer patient) do not express their concerns related to body image /appearance to their husbands, as seen in Indian contexts (Sunitha et al, 2022). Likewise, when a woman is the primary caregiver for their spouse (diagnosed with head and neck cancer), she may be more concerned about the health concerns of the husband, and may deal with the body image perceptions better. Irrespective of the gender, whether male or female is the patient and the partner, the acceptance of the reality would make them have a better quality of life. This indicates towards a need for focusing on developing an intervention that aims to improve cognitive interpretations of body image and illness perception of spouse (how they perceive illness perception and body image of patients) in a more realistic and accepting manner, may help in betterment of Quality of life of spouse, which leads to an improvement in the quality of life of patient as well. The results show that Spouse's social intimacy and the convenience scale which indicates socially desirable responses given by the spouse, shows significance and are predictors for Spouse quality of life. Thus,

incorporating the social dimensions in developing an intervention, such as engaging in social activities may generate social support, thereby reducing the negative psychological states in spouses, and improving the spouses' quality of life. The development of intervention should aim to facilitate communications between the partners, discussing the stressful experience dealing with cancer and to discuss any specific concerns they have to find remedial solutions, rather than responding to it in a socially desirable way.

Further by adding the patient independent variables to the regression model shows an increment in R^2 value to 57.5% and the independent variables (predictors) that show significance, and predict the criterion (Spouse quality of life) are Spouse Depression, B=-1.55, p value= 0.000; Spouse Sexual intimacy with B= 0.799, p=0.003; and Patient Intellectual intimacy B=0.880, p=.000 and Patient Recreational intimacy with B= 0.488, p=.001. The results show negative value for Spouse depression and positive value for Spouse sexual intimacy. This explains that a lower value of negative psychological state such as depression and higher value of sexual intimacy in the spouse indicates better Spousal quality of life. Results also demonstrate that in the presence of Patient's intellectual and recreational intimacy, Spouse's body image, illness perception and social intimacy aspects do not remain significant. Thus, interventions should focus more upon better communication and interactions between the couple physically, psychologically and socially, which targets improvement in Quality of life of couples.

Table 15

Summary of Model for predicting Quality of life in Partners using Hierarchical Multiple regression analysis

	B	**SEB**	***B***	***t***	$\mathbf{R^2}$	$\mathbf{\Delta R^2}$
Model 1						
(C=74.158; F=24.92)						
Spouse Depression	-1.430	0.376	-0.273	-3.807	**0.533**	0.512
Spouse Body Image	0.460	0.174	0.226	2.646		
Spouse Illness perception	-0.388	0.143	-0.196	-2.724		
Spouse social intimacy	0.457	0.216	0.195	2.118		
Spouse convenience scale	1.178	0.302	0.329	3.905		
Model 2						
(C=57.106; F=37.20)						
Spouse Depression	-1.555	0.327	-0.297	-4.753	**0.575**	0.560
Spouse Sexual Intimacy	0.799	0.267	0.232	2.995		
Patient Intellectual Intimacy	0.880	0.202	0.318	4.357		
Patient Recreational Intimacy	0.488	0.149	0.274	3.279		

Note. B=Unstandardized beta coefficient, SEB=Standard Error of Beta, β=Standardised beta coefficient, t=t- test, R2= Variance, C=Constant, F=F statistic
*= $p<.05$, **= $p<.01$, ***= $p<.001$.

c) Thirdly, to determine the predictors for Patient's sexual experience (criterion/ dependent variable) by adding the independent variables of the patient such as Patient's ECOGPS, Psychological states, Body image, Illness perception and Intimacy/ relationship dimensions, and step-down regression method is followed, where in the presence of other variables, the least contributing variable (which is dispensable and not found significant) is removed one by one.

The model shows R^2 value of 19.6% and the independent variables (predictors) that show significance, and predict the sexual experience (criterion) are Patient Somatisation B= .110, p value=.018; Patient Sexual intimacy with B= - 0.326, p=0.000; Patient Intellectual intimacy with B=--0.222, p=.003. The results show a negative value for sexual intimacy, which indicates that a lower the sexual intimacy, higher would be the sexual dysfunction in the patients. And a positive value in somatisation indicates an increase in sexual experience/sexual dysfunction.

When the spouse's independent variables are added to it, the model shows R^2 value of 30.1%. The independent variables (predictors) that show significance, and predict the criterion (Patient sexual experience or dysfunction) are Patient's somatisation, B= 0.118, p value= 0.008; Patient Sexual intimacy with B= - 0.263, p=0.001; and Patient Intellectual intimacy B=0.196, p=.007 and Spouse ECOGPS with B= 1.449, p=.00; Spouse's emotional intimacy with B=0.203, p=0.003; Spouse's recreational intimacy, B= - 0.289, p=0.030. The results show that higher value of spouse ECOGPS (which indicates poor function ability) and high emotional intimacy predicts poor sexual experience; whereas, high values in recreational intimacy shows a negative value that explains higher recreational intimacy helps to reduce sexual experience or dysfunction. Thus, interventions that improve patient's somatisation, Spouse's function ability and improve patient's sexual intimacy, and Spouse's recreational intimacy are aimed to improve sexual experience, or decrease sexual dysfunction. From the results, it is derived that Patient's sexual experience or sexual functioning aspect may not match with the spouse's sexual experience/ functioning. Hence, the emotional interpretations may be different, thus contributing to the differences in the values of patient data and spousal data. Thus, the satisfaction in terms of sexual functioning which the patient experiences may be different from the spouse.

Table 16

Summary of Model for predicting Sexual functioning in Cancer patients using Hierarchical Multiple regression analysis

	B	SEB	*B*	*t*	R^2	ΔR^2
Model 1						
(C=13.034; F=8.995)						
Patient Somatisation	0.110	0.046	0.207	2.406	**0.196**	0.174
Patient Sexual Intimacy	-0.326	0.075	-0.441	-4.372		
Patient Intellectual Intimacy	0.222	0.074	0.306	3.008		
Model 2						
(C=10.367; F=7.733)						
Patient Somatisation	0.118	0.044	0.222	2.684		
Patient sexual Intimacy	-0.263	0,076	-0.356	-0.356		
Patient Intellectual intimacy	0.196	0.071	0.270	0.270	**0.301**	0.262
Spouse ECOGPS	1.449	0.544	0.223	0.223		
Spouse Emotional intimacy	0.203	0,068	0.256	0.256		
Spouse Recreational Intimacy	-0.289	0.132	-0.208	-0.208		

Note.. B=Unstandardized beta coefficient, SEB=Standard Error of Beta, β= Standardised beta coefficient, t=t-test, R2= Variance, C=Constant, F=F statistic
*= $p<.05$, **= $p<.01$, ***= $p<.001$.

d) Fourthly, to determine the predictors for Spouse's sexual experience (criterion/ dependent variable) by adding the independent variables of the spouse such as Spouse's performance scale, psychological states, Body image, Illness perception and Intimacy/ relationship dimensions. Step-down regression method is followed, where in the presence of other variables, the least contributing variable (which is dispensable and not found significant) is removed one by one. The model shows R^2 value of 0.040 (4% only) and the

independent variable (predictor) that shows significance, and predict the Spouse's sexual experience (criterion) is Spouse's Body image with B= - 0.110, p value=.031. The results do not show much significance. Thus, it can be interpreted that the instrument could not elicit required information. The target population being in different treatment phases owing to the diversity in the types and periods of cancer treatment, which may or may not permit sexual functioning. Also, the instrument doesn't seem to be useful in capturing the psychological or emotional aspects of sexual functioning.

When the patient's independent variables are added to it, the model shows R^2 value of 13.8%. The independent variables (predictors) that show significance, and predict the criterion (Spouse's sexual experience) are Spouse's Somatisation, B= - 0.247, p value= 0.003; Spouse Illness perception with B= - 0.095, p=0.042; and Spouse recreational intimacy B=0.414, p=.042 and Patient's convenience scale with B=- 0.282, p=.001.

The results show that patients seem to have given greater socially desirable answers/ responses, which predicted lower sexual satisfaction in their spouses. Out of embarrassment, patients may have given socially desirable answers, while actually the couple have sexual dysfunction. There is also a possibility that the patient actually remains masked in his/her responses. Thus, Psycho-education, facilitating couple interaction through better participation in daily routine, and activities may be included as a component in designing an intervention.

Table 17

Summary of the Model for predicting Sexual functioning in Partners using Hierarchical Multiple regression analysis

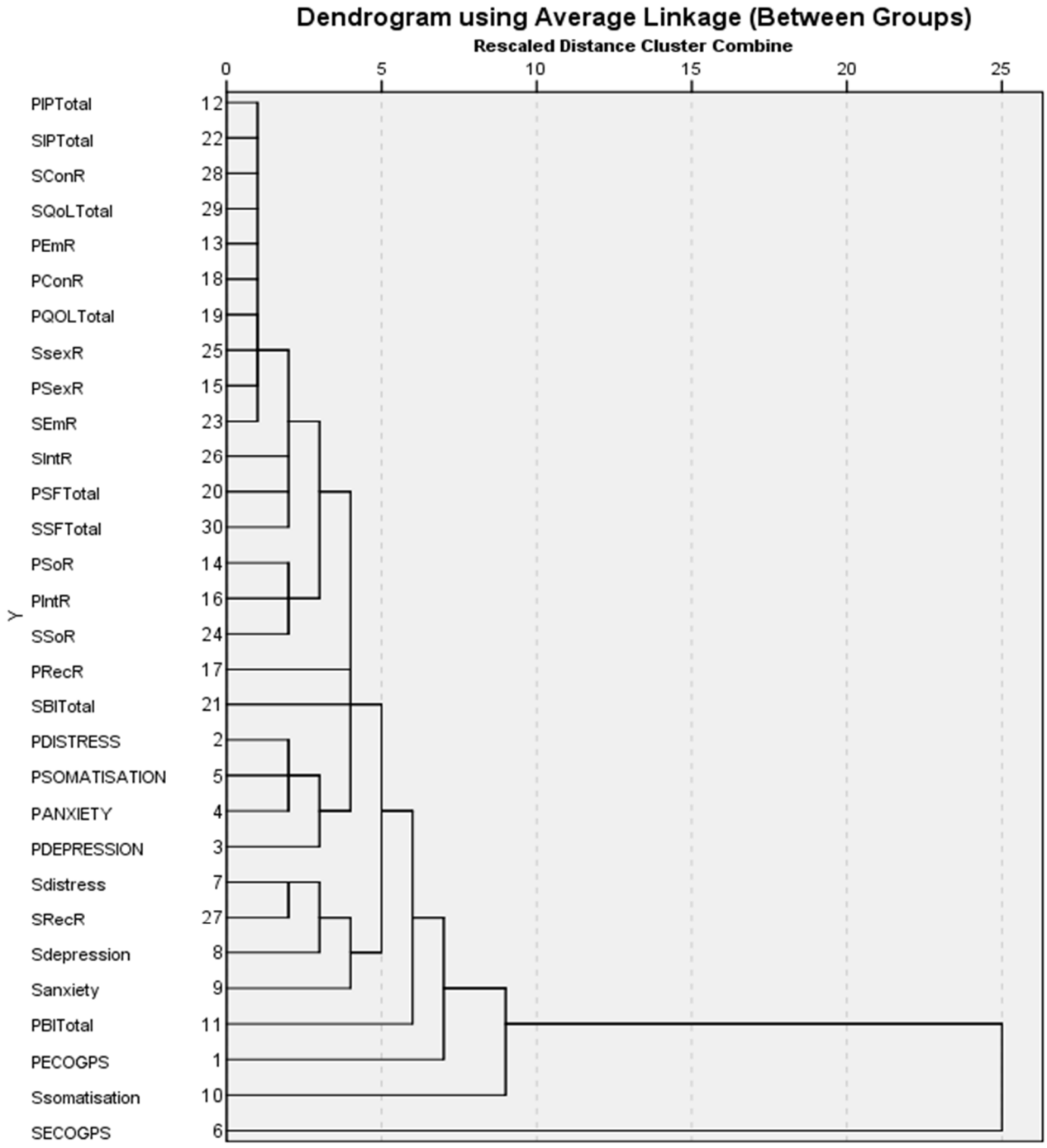
	B	SEB	*B*	*t*	R^2	ΔR^2
Model 1 (C=11.296; F=4.758)						
Spouse Body Image	-0.100	0.046	-0.201	-2.181	**0.040**	0.032
Model 2 (C=19.579; F=4.391)						
Spouse somatisation	-0.247	0.081	-0.358	-3.052	**0.138**	0.106
Spouse Illness perception	-0.095	0.046	-0.196	-2.061		
Spouse Recreational Intimacy	0.414	0.168	0.320	2.469		
Patient convenience scale	-0.282	0.081	-0.354	-3.487		

Note. *1. B=Unstandardized beta coefficient, SEB=Standard Error of Beta, β= Standardised beta coefficient, t=t- test, R2= Variance, C=Constant, F=F statistic*
*2. *= p<.05, **= p<.01, ***= p<.001.*

For a better understanding and interpretation of data (couple data), Hierarchical cluster analysis, and dendrogram representation is made in Table 18 given below that includes dimensions such as psychological states, illness perception, body image. intimacy, quality of life, sexual functioning and performance scale.

Figure 11

Dendrogram representation of Hierarchical cluster analysis between the Cancer patient & partner/ spouse group Pie chart depicting Types of Cancer in the Intervention study, including a Control group & an Experimental group



Dendrogram is a pictorial representation of the hierarchical relationship between the features/variables. The variables or features are clustered together based on the data of cancer patients and partners, N=115 couples, v/f=30 (15 related to patients and 15 related to partners' variables or features). The distances are distributed from 0 to 25.

By taking tolerance as 1.5, all the variables within 1.5 marked vertically with a dotted line are grouped in a cluster. The rest remains as an individual variable or feature. In the dendrogram, Variables (12 to 23) Patient Illness perception, Spouse Illness perception, Spouse convenience scale of intimacy, Spouse quality of life, Patient emotional intimacy, Patient convenience scale of intimacy, Patient quality of life, Spouse sexual intimacy, Patient sexual intimacy, and Spouse emotional intimacy fall into one cluster, which means these variables are similar. The subjects perceive these variables in a similar way and the responses given by the subjects and the scores obtained are similar. Thus, Patient illness perception and partner(spouse) illness perception is similar. Likewise, Patient Quality of life and Partner Quality of life; Patient emotional intimacy and Partner emotional intimacy; patient sexual intimacy and partner sexual intimacy scores are similar. The rest of the 20 variables stand apart as individual variables/features and the responses recorded by these variables (spouse intellectual intimacy, patient sexual functioning, spouse sexual functioning, patient social intimacy, patient intellectual intimacy, spouse social intimacy, patient recreational intimacy, spouse body image, patient's distress, somatisation, anxiety and depression; spouse's distress, recreational intimacy, depression, anxiety; patient body image, patient performance scale, spouse somatisation, spouse performance scale) will not be similar to the rest of the variables/ features. Thus, a total of 21 clusters are formed by taking tolerance as 1.5.

Increasing tolerance to 2.5, we can observe that a total of 13 clusters are formed. Variables (12 to 30) Patient Illness perception, Spouse Illness perception, Spouse

convenience scale of intimacy, Spouse quality of life, Patient emotional intimacy, Patient convenience scale of intimacy, Patient quality of life, Spouse sexual intimacy, Patient sexual intimacy, and Spouse emotional intimacy, spouse intellectual intimacy, patient sexual functioning, spouse sexual functioning fall into one cluster, which means these variables are similar and the subjects' responses for these variables and the scores obtained are similar. Variables 14, 16, and 24 (representing patient social intimacy, patient recreational intimacy and partner social intimacy) form the second cluster. Variable 17(patient recreational intimacy) forms the third cluster, and variable 21(spouse body image) is the fourth cluster. Variables 2, 5, and 4 (representing patients' distress, somatization and anxiety) form the fifth cluster, which means the subjects responses and the scores obtained for these features or variables are similar. Variable 3(patient depression) stands as the sixth cluster. Variables 7 (spouse distress), and 27 (spouse recreational intimacy) form cluster seven, and the rest of variables 8-16 (spouse depression, spouse anxiety, patient body image, patient performance scale, spouse somatisation and spouse performance scale) stands apart as independent clusters.

Taking tolerance as 3.5, a total of six clusters are formed. The first cluster is formed by grouping the variables 12 to 3. In this cluster, the variables such as illness perception, quality of life, all types of intimacy, sexual experience/functioning of both the patient and partner; the psychological states of the patient such as distress, depression, anxiety and somatisation as well as body image of partner are similar, which means the responses recorded and scores obtained by the subjects for these variables or features are similar.

Variables 7, 27, 8, and 9 represent Partners' distress, depression, anxiety and recreational intimacy and are grouped as the second cluster. Cluster two represents the partner's responses and the patient's responses do not find any similarity with the

spouse/partner's responses. The rest of the variables 11, 1, 10, and 6 (Patient body image, Patient performance scale, Partner somatisation and partner performance scale) stand apart as the individual cluster. This explains that the responses for these variables Patient body image, Patient performance scale, Partner somatisation and partner performance scale are not similar and the scores obtained by the subjects are not similar.

Taking tolerance as 5, a total of 6 clusters are formed and there are no variations observed. Thus, from the present study, we can take the tolerance level to 3.5 instead of the expert's view of tolerance to 5. Thus, the dendrogram, which is a pictorial representation of hierarchical cluster analysis explains the similarity in responses given by cancer patients, and their partners, that are grouped together as clusters.

Qualitative Analysis

When the semi-structured interview was conducted, there were common responses as well as diverse statements given by the couple with respect to sexuality after cancer diagnosis. However, the majority used words like 'tension', 'worry', 'grief' to express their mental state. From the given set of responses by around 15 couples, it was derived that in addition to the negative emotions, body image concerns, illness threat, poor function ability, cancer-related fatigue, there are also disruptions in their roles and responsibilities, which in turn affected the intimacy, sexual functioning and had negative impact on the quality of life.

The Qualitative data analysis (based on semi-structured interview) during the exploratory study (Phase 1) of the present study explained about the disruption of couple's life after being diagnosed with cancer. Around 53% (n=8) reported to have physical ailments, 40% (n=6) had psychological distress, 70% (n=11) reported financial distress, 26% (n=4) reported caregivers' burden, 33% (n=5) expressed worry about children's future having no

income source or social support in their life, 50% (n=7) mentioned relationship and intimacy concerns, uncertainty about future, etc. The Qualitative analysis elucidates the contribution of biological, psychological, and social factors to the "cumulative disease burden" associated with cancer. Hence, a psychological intervention based on the biopsychosocial model was conceptualised for the present research.

Phase 1 presents the study's exploratory phase. An intervention design framework has developed in response to descriptive analysis, hypothesis testing (correlation & paired t-test), inferential statistics (multiple linear regression), hierarchical cluster analysis/dendrogram (unsupervised learning), and qualitative data exploration. A detailed description of the developed intervention for the study is included in the methods chapter of the present study.

Objective 3

The third objective of the present study was to develop a suitable psychosocial intervention as a package in Phase II of the study, which is based upon the assessment of Phase 1 involving exploration of psychological states, illness perception, body image, dimensions of the relationship, quality of life and sexual functioning among patients diagnosed with cancer and partners.

Phase II

The Phase II of the Research discusses the development of an intervention package, which is based on the analysis of the Exploratory Phase of the study (Phase I). The intervention is conceptualised with a relational approach, including both the patient and partner needs, and a ‘CARE Model’ is developed. The existing models such as Bio Psycho-Social Model, Sexual Health model and Indigenous methods of healing are reviewed and redefined in the developed ‘CARE Model’ which describes four pillars to strengthen and

support the couples dealing with cancer. Here, ‘C’ represents couple communication and compassion; ‘A’ indicates accepting and aiding each other, where the couples acknowledge the changes and make new affirmations in life; ‘R’ emphasises on rejuvenation in terms of relaxing, and reviving the relationship, restoring balance and harmony; and ‘E’ stands for emotional support, enhancing emotional health and empowering each other. The psychological intervention package based on ‘CARE’ model includes three components: Psycho-education, Yoga Nidra (Indigenous method of Psychotherapeutic healing) and Couple activities. Thus, CARE Model focuses on improving the couple relationship, intimacy and quality of life.

Objective 4

The fourth objective of the study aimed to administer the developed intervention package along with the medical intervention as a complementary approach on a small sample of cancer patients along with partners. The participants were provided with necessary guidelines, informed consent was obtained, and administration of the developed intervention modules was done.

Objective 5

The fifth objective of the study aimed to assess the post-intervention effect on psychological states, illness perception, body image, dimensions of the relationship, quality of life, and sexual function on a limited group of cancer patients and their partners is the fifth objective of the study, concluded in the Phase 3 of the research.

The impact of Psychoeducation modules and Yoga Nidra practice was measured quantitatively using CISCC Scale and VAS (Visual analogue scale). Whereas, a feedback form was created to measure Couple activity log (FF-CA). The couple’s activity response

sheets, observation record and feedback were collected, and carefully studied, and qualitative analysis of data was made. Thus, the present research uses a mixed method approach, combining both quantitative and qualitative analysis to interpret the results in the final phase of the research.

The response sheets of couples with respect to questions related with participation in daily activity were sequentially documented. The participants were given numbers to maintain confidentiality and the responses were noted down (verbatim reports). After transcribing the responses into meaningful sentences, ‘sub- themes’ and ‘themes’ were evolved. The information was subjected to "thematic analysis" using the Braun & Clarke thematic analysis method, which involved reviewing passages, extracting and adding new codes as "themes" when ideas surfaced from the data. A summary of the "sub themes" and "key themes" pertaining to intimacy and sexual functioning was provided in Table 18. The main conclusions, which were derived from the responses obtained during the interview scheduled for the couple activities, were supported by illustrative quotes from the interview (Table 18).

Table 18

Thematic Analysis – qualitative exploration of couple interaction and activity using semi-structured interview method

S.NO	QUESTIONS (ACTIVITY SCHEDULE)	INTERVIEW TRANSCRIPTS	SUB-THEMES	THEMES
1.	How much time do you both spend together?	Can we be together in cancer"? 'I am tensed that he don't like me'	Intimacy-related mis-conception Intimacy-related distress	**Lack of awareness about the need for Intimacy & interaction among the couples** **Somatic related concerns**
2.	Do you like to participate in activities together?	'I am tired very often'	Body functioning	
		'I stay separately in a room'	Family- related	**Stigma**
		'Family members may not like '		
3.	Do you remember and discuss your past memories?	'I looked beautiful earlier'	Concern related to appearance	**Body image**
		'I feel sad now when I think about past'	Longing for the past life	**Grief**

4.	How often do you discuss present concerns, or challenges?	‘I am fearful about death, ‘Who will take care of my family and children’? ‘Life can’t be same again’	Fear about death Uncertainty about family, and future life Lack of hope	**Future-oriented concerns**
5.	Do you express affection to one another?	‘We do not communicate or express much’	Lack of Communication	**Need for emotional expression**
6.	How do you like to support one another?	‘I am taking care of food, and care in every possible way’ ‘I don’t know what else to do’	Care, and concern for patient Lack of hope, or awareness	**Need for Psycho-education**

The ‘Themes’ generated were Lack of awareness about need for intimacy and interaction among the couples, Somatic-related concerns, Social stigma, Body image dissatisfaction, Grief, Future- oriented concerns, Need for emotional expression, Need for Psycho-education. Based on these findings, couple activity was structured and scheduled to improve intimacy in the relationship.

The barriers for sexual health and functioning reported by the patients were majorly physical symptoms such as pain, discomfort, fatigue, and general debility. Psycho-social concerns such as worries and apprehension about total cure, stigma about cancer, misconception not to get closer with spouse, body image issues, loss of libido, low self-esteem, and lack of hope about future were expressed.

The spouses expressed worry about complete recovery, and were uncertain about the future. Some partners had expressed doubts about participation in sexual functioning, and whether patients can come close to other family members such as children and elderly members at home. On the other hand, whereas, some others explained that with cancer diagnosis, they have frequent follow ups and visits to hospitals for the treatments, and there is a disruption in their personal life, relationship and intimacy. The change in role and responsibility as a caregiver, taking care of the diseased, domestic chores, children’s needs, and managing job- related matters were very tiresome, and the ‘care giver burden’ was emphasised by the partner of cancer patients. Thus, there were physical, emotional and social factors governing a couple's interaction, engagement and intimacy after cancer diagnosis and subsequent treatments.

The activity schedule was structured in a manner with the focus to improve their engagement in daily activities, and establish normalcy in their relationship.

Anytime, the couples were not able to participate due to distress, or other difficulties, they were encouraged to speak to one another. The researcher addressed some of the doubts regarding sexual functioning aspects, and encouraged to seek medical opinion and treatment for the sexual concerns by referring to the consulting physician.

Phase III

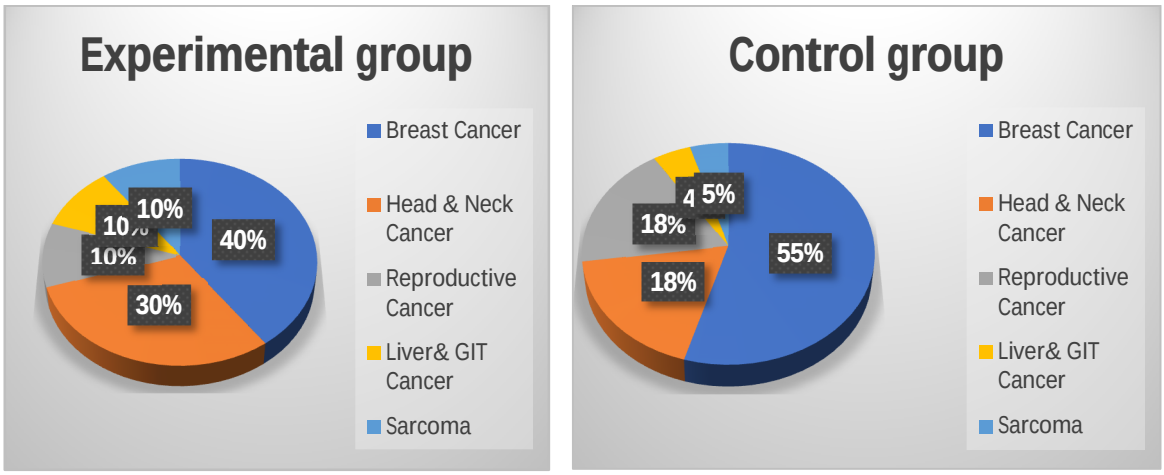
Phase III is the final phase of the research and describes the results of the intervention study. Following an experimental research design, with an experimental group and a control group, the intervention study phase focused on testing developed intervention by conducting a pre-assessment and post-assessment of the variables of the study such as psychological states, body image, illness perception, intimacy, quality of life and sexual functioning among cancer patients and their partners. The responses of the participants (cancer patients and spouse) after administering the developed psychological intervention were recorded.

Statistical procedures used were descriptive statistics, paired t tests, (to measure the effect of intervention) with the help of SPSS 26.0 version, effect size for the intervention was calculated, and graphs were plotted wherever necessary to explain the results.

The intervention study includes an intervention group and a control group. There are 20 couples (Cancer Patient and Partner) in the experiment group, and 22 couples in the control group for the study. The mean age is 54 years, and the pie chart (Figure 12) below describes the types of cancer patients included in the intervention study.

Figure No: 12

Types of Cancer in the Intervention study



The Figure 12 above describes the percentage of types of cancer included in the Phase 3 Intervention study. The Experimental group included 40% Breast cancer (n=8), 30% Head & neck cancer (n=6), 10% each of Reproductive (n=2), Gastrointestinal cancer (n=2) and Sarcoma (n=2).

The Control group comprised of 55% Breast cancer patients (n=12), 18% Head & neck cancers (n=4), 18% Reproductive cancer (n=4), 4% Gastro-intestinal(n=1) & 5% Sarcoma patients(n=1)

Table 19

Summary of comparisons of pre and post -test analysis (M, SD) of psycho-social dimensions- psychological states, body image, illness perception, intimacy, quality of life, and sexual functioning among patients diagnosed with Cancer and their Partners

	Pre PIA PATIENT		Post PIA PATIENT		Pre PIA SPOUSE		Post PIA SPOUSE	
Dimensions	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Distress	22.19	6.54	15.00	5.29	16.31	4.87	12.69	5.00
Depression	5.64	2.50	3.25	1.99	4.14	1.80	2.79	1.33
Anxiety	8.07	3.64	5.45	2.92	4.21	1.99	3.12	1.59
Somatisation	13.81	5.62	11.25	5.75	5.93	3.40	3.95	2.21
Body Image	13.02	7.04	8.80	4.90	12.19	5.14	9.81	5.45
Illness Perception	60.26	5.46	52.10	8.92	59.21	8.18	47.19	11.29
Emotion Intimacy	16.40	2.85	20.55	3.30	14.57	2.39	17.62	3.83
Social Intimacy	12.60	5.00	13.25	2.55	13.24	5.26	15.48	5.47
Sexual Intimacy	13.36	4.90	10.90	3.16	12.38	4.10	14.05	4.07
Intellectual Intimacy	11.29	4.39	9.70	3.37	10.48	3.55	12.90	3.75
Recreation Intimacy	10.90	6.41	8.10	3.25	4.88	2.67	7.43	4.35
Convenience scale	16.12	3.76	12.45	3.13	16.07	3.92	14.57	4.56
Quality of life	73.71	7.44	74.45	7.27	79.81	9.01	81.67	8.47
Sexual functioning	10.60	3.92	8.75	4.31	8.98	2.32	10.45	2.42

Note. M=Mean values; SD= standard deviation; PIA= Psychological intervention assessment.

Table 20

Summary of paired t-test to ascertain effect of developed psychological intervention modules among Cancer patients (n=20)

Patient Data	M (Pre PIA)	SD	M (Post PIA)	SD	*T*	Sig.	d
Distress	22.19	6.54	17.81	7.66	5.65	.000***	**1.46**
Depression	5.64	2.50	4.38	2.60	5.70	.000***	**1.04**
Anxiety	8.07	3.64	6.17	3.48	5.56	.004**	**1.09**
Somatisation	13.81	5.62	11.10	5.43	5.82	.000***	**0.90**
Body Image	13.02	7.04	10.76	6.61	4.53	.000***	**0.8**
Illness Perception	60.26	5.46	51.00	12.6	5.01	.000***	**1.45**
Emotional Intimacy	16.40	2.85	19.98	3.89	-5.91	.000***	**2.05**
Social Intimacy	12.60	5.00	14.52	4.19	-5.13	.000***	**1.20**
Sexual Intimacy	13.36	4.90	14.83	4.69	-4.58	.008**	**0.74**
Intellect Intimacy	11.29	4.39	13.19	3.72	-4.42	.015*	**0.94**
Recreat Intimacy	10.90	6.41	14.00	6.48	-4.45	.000***	**1.05**
Convenience scale	16.12	3.76	13.74	4.74	12.69	.003*	**1.86**
Quality of life	73.71	7.44	76.33	7.65	-3.52	.002*	**0.80**
Sexual functioning	11.83	3.92	10.60	3.83	4.54	.042*	**0.5**

Note. *1. M=Mean values; SD= standard deviation; t=t-test; d = Cohens d*
*2. *= p<.05, **= p<.01, ***= p<.001.*

The Table 20 presented above shows the results of paired t-tests done on psychological states, body image, illness perception, levels of intimacy in a relationship, quality of life and sexual (dys)functioning among cancer patients before and after psychological intervention. The paired t-test done on psychological states

shows that there was a significant difference between the pre and post-psychological intervention assessment (PIA) in the distress of cancer patients, t (20) =5.65, p<0.001. This indicated that the distress levels among cancer patients were better during post-PIA (M= 17.81, SD=7.66) in comparison to pre-PIA (M= 22.19, SD= 6.54). The effect size (Cohen's d =1.46) of psychological intervention was found to be large. A significant difference was found between the pre and post-psychological intervention assessment (PIA) in the depression of cancer patients, t (20) =5.70, p<0.001. This indicated that depression among cancer patients was better during post-PIA (M= 4.38, SD=2.60) in comparison to pre-PIA (M=5.64, SD=2.50). The effect size (Cohen's d =1.04) of psychological intervention was found to be large in reducing depression among cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) in the anxiety of cancer patients, t (20) =5.56, p<0.004. This showed that depression among cancer patients was better during post-PIA (M= 6.17. SD=3.48) in comparison to pre-PIA (M= 8.07, SD=3.64). The effect size (Cohen's d =1.09) of psychological intervention was found to be large in reducing anxiety among cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of somatisation in cancer patients, t(20)=5.82, p<0.001. This showed that depression among cancer patients was better during post-PIA (M=11.10, SD= 5.43) in comparison to pre-PIA (M=13.81, SD=5.62). The effect size (Cohen's d =0.90) of psychological intervention was found to be large in reducing somatisation among cancer patients. There was a significant difference between the pre and post-PIA scores of Body image issues of patients diagnosed with cancer, t (20) =4.53, p<.000 This explains that the body image issues of cancer patients reduced during post-PIA (M=10.76, SD=6.61) in comparison to pre -PIA scores (M=13.02, SD=7.04). The effect size (Cohen's d =0.80) of psychological

intervention was found to be medium with respect to body image issues in cancer patients. There was a significant difference between the pre and post-PIA scores of Illness perception in patients diagnosed with cancer, t (20) = 5.01, p <.000. This explains that the body image issues of cancer patients are reduced during post-PIA (M=51, SD=12.6) in comparison to pre -PIA scores (M=60.26, SD=5.46). The effect size (Cohen's d =1.45) of psychological intervention is found to be large with respect to illness perception among cancer patients. There was a significant difference between pre and post-PIA, the highest scores of intimacy were found in emotional intimacy, social intimacy and recreational intimacy among cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of emotional intimacy in cancer patients, t (20) = -5.91, p<0.001. This showed that emotional intimacy among cancer patients was better during post-PIA (M= 19.98, SD=3.89) in comparison to pre-PIA (M= 16.40, SD=2.85), with effect size (Cohen's d =2.05), explaining impact of psychological intervention is substantially large. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of social intimacy in cancer patients, t (20) = -5.13, p<0.001. This showed that social intimacy among cancer patients was better during post-PIA (M=14.52, SD=4.19) in comparison to pre-PIA (M= 12.60, SD=5.00) with an effect size (Cohen's d =1.20), explaining impact of psychological intervention is substantially large. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of sexual intimacy in cancer patients, t (20) = - 4.58, p<0.01. This showed that sexual intimacy among cancer patients was better during post-PIA (M=14.83, SD=4.69) in comparison to pre-PIA (M= 13.36, SD= 4.90) with effect size (Cohen's d =0.74), explaining impact of psychological intervention is medium.

A significant difference was found between the pre and post-psychological intervention assessment (PIA) of intellectual intimacy in cancer patients, t (20) = -4.42, $p<0.05$. This showed that intellectual intimacy among cancer patients was better during post-PIA (M=13.19, SD= 3.72) in comparison to pre-PIA (M= 11.29, SD=4.39) with effect size (Cohen's d =0.94), explaining impact of psychological intervention is substantially large. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of recreational intimacy in cancer patients, t (20) =-4.45, $p<0.001$. This showed that recreational intimacy among cancer patients was better during post-PIA (M= 14.00, SD=6.48) in comparison to pre-PIA (M=10.90, SD=6.41) with effect size (Cohen's d =1.05), explaining the impact of psychological intervention is substantially large. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of convenience scale in cancer patients, t (20) = 12.69, $p<0.01$. This showed that socially desirable answering among cancer patients was lesser during post-PIA (M= 13.74, SD=4.74) in comparison to pre-PIA (M=16.12, SD=3.76) with effect size (Cohen's d =1.86), explaining impact of psychological intervention is large. There was a significant difference found between the pre and post-psychological intervention assessment (PIA) of quality of life in cancer patients, t (20) = -3.52, $p<0.01$. This showed that quality of life among cancer patients was better during post-PIA (M= 76.33, SD=7.65) in comparison to pre-PIA (M= 73.71, SD=7.44). There was a significant difference found between the pre and post-psychological intervention assessment (PIA) of sexual (dys)function in cancer patients, t (20) =4.54, $p<0.01$. This showed that sexual dysfunction among cancer patients reduced during post-PIA (M= 10.60, SD=3.83) in comparison to pre-PIA (M= 11.83, SD=3.92, with effect size (Cohen's d =0.80), explaining the impact of psychological intervention is medium.

Table – 21

Summary of paired t-test to ascertain the effect of developed psychological intervention modules among Partners (n=20)

	M (Pre PIA)	SD	M (Post PIA)	SD	*T*	Sig.	D
Distress	16.31	4.87	12.69	5.00	6.11	.000***	**1.96**
Depression	4.14	1.80	2.79	1.33	5.82	.000***	**1.54**
Anxiety	4.21	1.99	3.12	1.59	4.78	.000***	**1.19**
Somatisation	5.93	3.40	3.95	2.21	5.52	.000***	**1.09**
Body Image	12.19	5.14	9.81	5.45	5.50	.000***	**1.33**
Illness Perception	59.21	8.18	47.19	11.29	6.37	.000***	**2.11**
Emotion Intimacy	14.57	2.39	17.62	3.83	-5.11	.000***	**1.96**
Social Intimacy	13.24	5.26	15.48	5.47	-3.53	.001***	0.41
Sexual Intimacy	12.38	4.10	14.05	4.07	-3.92	.000***	**0.96**
Intellect Intimacy	10.48	3.55	12.90	3.75	-3.97	.000***	**1.43**
Recreat. Intimacy	4.88	2.67	7.43	4.35	-3.89	.000***	**1.44**
Convenience scale	16.07	3.92	14.57	4.56	5.44	.000***	**1.50**
Quality of life	79.81	9.01	81.67	8.47	-3.79	.000***	**0.66**
Sexual function (dys)	10.45	2.32	8.98	2.42	4.69	.000***	**1.05**

Note. *1. M=Mean values; SD= standard deviation; t=t-test; d = Cohens d*
2. *= $p<.05$, **= $p<.01$, ***= $p<.001$.

Table 21 shows the paired t test value, mean differences (M) and standard deviation (SD) of psychological states, body image, illness perception, levels of intimacy in a relationship, quality of life and sexual (dys)functioning among the spouses of cancer patients before and after psychological intervention.

The paired t-test done on psychological states shows that there was a significant difference between the pre- and post-psychological intervention assessment (PIA) in the distress in the spouses of cancer patients, $t(20) = 6.11$, $p<0.001$. This indicated that the distress levels among spouses were better during post-PIA

(M=12.69, SD=5.00) in comparison to pre-PIA (M=16.31, SD=4.87), with effect size (Cohen's d =1.96). Thus, the effect of psychological intervention was found to be substantially large in reducing distress among spouses of cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) in the depression in spouses of cancer patients, t (20) =5.82, p<0.001. This indicated that depression in spouses of cancer patients was better during post-PIA (M=2.79, SD=1.33) in comparison to pre-PIA (M= 4.14, SD=1.80) with effect size (Cohen's d =1.54). The effect of psychological intervention was found to be large in reducing depression among spouses of cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) in the anxiety levels of spouses of cancer patients, t (20) =4.78, p<0.001. This showed that anxiety among spouses of cancer patients was better during post-PIA (M=3.12, SD=1.59) in comparison to pre-PIA (M=4.21, SD=1.99) with effect size (Cohen's d =1.19). The effect of psychological intervention was found to be large in reducing anxiety among the spouses of cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of somatisation among spouses of cancer patients, t (20) =5.52, p<0.001. This showed that somatisation among spouses of cancer patients was better during post-PIA (M=3.95, SD=2.21) in comparison to pre-PIA (M=5.93, SD=3.40) with effect size (Cohen's d =1.09). The effect of psychological intervention was found to be large in reducing somatisation among the spouses of cancer patients.

There was a significant difference between the pre and post-PIA scores of Body image issues of spouses of patients diagnosed with cancer, t (20) = 5.50, p<.001. This explains that the body image issues of spouses of cancer patients are reduced during post-PIA (M= 9.81, SD=5.45) in comparison to pre -PIA scores (M=12.19,

SD=5.14) with effect size (Cohen's d =1.33). The effect of psychological intervention was found to be large in reducing body image issues in spouses of cancer patients.

There was a significant difference between the pre and post-PIA scores of Illness perception in spouses of patients diagnosed with cancer, t (20) =6.37, p<.001. This explains that the body image issues of cancer patients have reduced during post-PIA (M=47.19, SD=11.29) in comparison to pre -PIA scores (M=59.21, SD=8.18), with effect size (Cohen's d =2.11). The effect of psychological intervention was found to be substantially large in reducing illness perception, or perceiving illness as threat among spouses of cancer patients.

There was a significant difference between pre and post-PIA, the highest scores of intimacy were found in emotional intimacy, social intimacy and recreational intimacy among spouses of cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of emotional intimacy in spouses of cancer patients, t(20)= -5.11, p<0.001. This showed that emotional intimacy among spouses of cancer patients was better during post-PIA (M= 17.62, SD=3.83) in comparison to pre-PIA (M=14.57, SD=2.39), with effect size (Cohen's d =1.96). The effect of psychological intervention was found to be substantially high in emotional intimacy in the spouse.

A significant difference was found between the pre and post-psychological intervention assessment (PIA) of social intimacy in spouses of cancer patients, t (20) =-3.53, p<0.001. This showed that social intimacy among spouses of cancer patients was better during post-PIA (M=15.48, SD=5.47) in comparison to pre-PIA (M=13.24, SD=5.26), with effect size (Cohen's d= 0.41). The effect of psychological intervention is found to be small in the spouse with respect to social intimacy. A significant

difference was found between the pre and post-psychological intervention assessment (PIA) of sexual intimacy in spouses of cancer patients, t (20) =-3.92, p<0.001. This showed that sexual intimacy among the spouses of cancer patients was better during post-PIA (M= 14.05, SD=4.07) in comparison to pre-PIA (M=12.38, SD=4.10) with effect size (Cohen's d =0.96). This explains the effect of intervention is large. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of intellectual intimacy among the spouses of cancer patients, t (20) =-3.97, p<0.001. This showed that intellectual intimacy among the spouses of cancer patients was better during post-PIA (M= 12.90, SD=3.75) in comparison to pre-PIA (M=10.48, SD=3.55) with effect size (Cohen's d =1.43). The effect of psychological intervention is found to be large in improving intellectual intimacy among spouses of cancer patients. A significant difference was found between the pre and post-psychological intervention assessment (PIA) of recreational intimacy among the spouses of cancer patients, t (20) -3.89, p<0.001. This showed that recreational intimacy among spouses of cancer patients was better during post-PIA (M=7.43, SD=4.35) in comparison to pre-PIA (M=4.88, SD=2.67), with effect size (Cohen's d =1.44). The effect of psychological intervention was found to be large in improving recreational intimacy among spouses of cancer patients.

A significant difference was found between the pre and post-psychological intervention assessment (PIA) in the convenience scale among spouses of cancer patients, t (20) =5.44, p<0.001. This showed that socially desirable answering to the questionnaire among spouses of cancer patients was lesser during post-PIA (M=14.57, SD=4.56) in comparison to pre-PIA (M=16.07, SD= 3.92) with effect size (Cohen's d =1.50). The effect of psychological intervention is found to be large in reducing socially desirable answers (convenience scale) among spouses of cancer patients.

There was a significant difference found between the pre and post-psychological intervention assessment (PIA) of quality of life among spouses of cancer patients, t (20) =-3.79, p<0.01. This showed that quality of life among spouses of cancer patients was better during post-PIA (M=81.67, SD=8.47) in comparison to pre-PIA (M=79.81, SD=9.01), with effect size (Cohen's d =0.66). The effect of psychological intervention is found to be medium in improving quality of life among spouses of cancer patients

There was a significant difference found between the pre and post-psychological intervention assessment (PIA) of sexual (dys)function in spouses of cancer patients, t (20) =4.69, p<0.01. This showed that sexual function among spouses of cancer patients was better during post-PIA (M=8.98, SD=2.42) in comparison to pre-PIA (M=10.45, SD=2.32) with effect size (Cohen's d =1.05). The effect of psychological intervention is found to be large in improving sexual dysfunction among spouses of cancer patients.

Pre and Post Intervention Assessment

Effects of developed interventions such as Psycho-education, Yoga Nidra and Couple activities were evaluated by doing a pre and post assessment of questionnaires CISCC, VAS and couple activity participation, and response sheets.

The first method of intervention is psychoeducation, which is a cognitive-level intervention. The effect of psychoeducation intervention was measured by using Cancer information scale for concerns of couples (CISCC) Pre and post intervention assessment of the effect of intervention was recorded, and data was tabulated (Table 22).

Table No.22

Means of pre and post intervention assessment of the impact of psycho-education on patients with cancer (CISCCP) (n=20)

		M	SD	*t*	Sig.	*D*
Impact of Psycho-education						
Pair 1	Pre CISCCP	4.25	1.618	13.03	.000***	2.00
(Patient)	Post CISCCP	1.10	.912			
Pair 2	Pre CISCCS	4.95	1.605	12.36	.000***	3.31
(Spouse)	Post CISCCS	.95	.605			

Note. . *M=Mean values; SD= standard deviation; t=t-test; d= Cohens d; CISCCP= Cancer Information Scale for Concerns of Couple dealing with cancer*
. *= $p<.05$, **= $p<.01$, ***= $p<.001$.

Table 22 explains the paired t test values, and mean differences in the scores of CISCC, which records the myths and misconceptions related to cancer and sexual health. The paired t-test done with respect to CISCC (Cancer Information Scale for Concerns of Couple dealing with cancer) shows that there was a significant difference between the pre-and post-psychological intervention assessment (PIA) in the CISCC scores in cancer patients, t (20) =13.03, p<0.001. This indicated that misconception among patients was lesser during post-PIA (M=1.10, SD=0.91) in comparison to pre-PIA (M= 4.25, SD= 1.62), with effect size (Cohen's d =2). The effect of psychological intervention was found to be large in reducing myth and misconceptions among cancer patients. Likewise, there was a significant difference between the pre-and post-psychological intervention assessment (PIA) in the CISCC scores among spouses of cancer patients, t (20) = 12.36, p<0.001. This indicated that misconception among patients was lesser during post-PIA (M=0.95, SD=0.60) in comparison to pre-PIA (M=4.95, SD= 1.60) with effect size (Cohen's d =3.31). The effect of psychological intervention was found to be substantially large in reducing myths and misconceptions

among the spouses of cancer patients. This explains that the partner group shows larger difference in the pre and post- test CISCC analysis.

Second intervention for the study is Yoga Nidra, or 'yogic sleep', an indigenous method of relaxation technique that combines 'Guided Meditation' with a specific yoga posture called 'Shavasana'. To test the relaxation response generated with psychotherapeutic intervention 'Yoga Nidra' among cancer patients and their partners, a visual analogue scale was used, and Pre-test and post-test assessments were recorded and tabulated below.

Figure 13

Pre and post intervention assessment in the level of awareness among Cancer patients & partners after psycho-education measured with CISCC

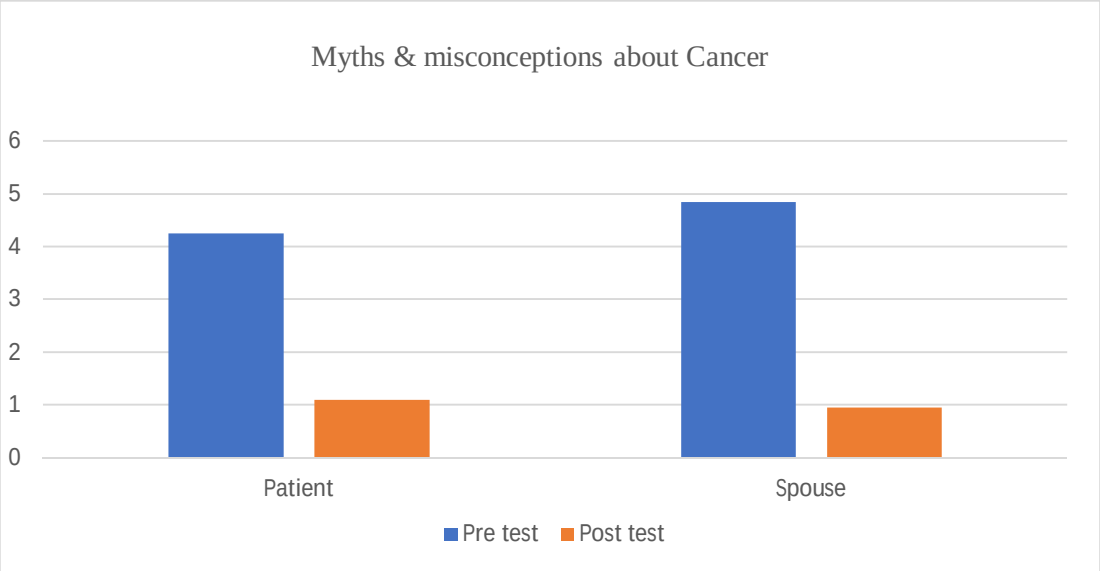


Figure No. 14

Pre and Post test of Relaxation response assessed through the Visual analogue scale (VAS)

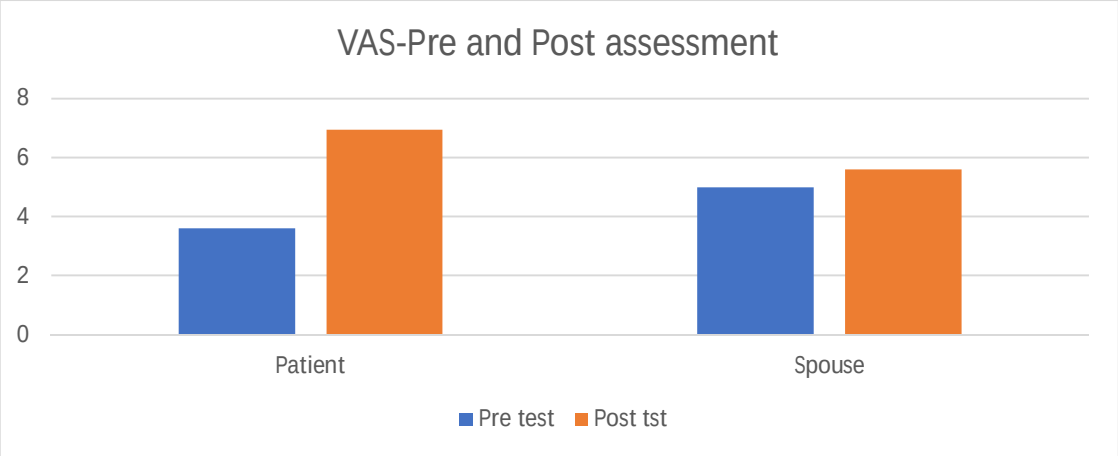


Table No. 23

Summary of paired t-test to ascertain the effect of Yoga Nidra for relaxation among Cancer patients and partners (n=20)

Impact of Yoga Nidra		**M**	**SD**	***t***	**Sig**	***d***
Pair 1	Pre VAS	4.25	1.39	-7.46	.000	3.08
(Patient)	Post VAS	1.10	.0.65			
Pair 2	Pre VAS	4.95	1.19	-3.04	.007	0.58
(Spouse)	Post VAS	.95	0.82			

Note. *M=Mean values; SD= standard deviation; t=t-test; d= Cohens d; VAS= Visua analogue scale.*

*= p<.05, **= p<.01, ***= p<.001.

Table 23 explains the paired t test values, and mean differences in the scores of Visual Analogue Scale (VAS), which records the relaxation response generated with Yoga Nidra.

The paired t-test done with respect to scores of relaxation effect (measured by VAS) shows that there is a significant difference between the pre-and post-

psychological intervention assessment (PIA) in the VAS scores in cancer patients, t (20) =-7.46, p<0.001. This indicated that Relaxation among patients was higher during post-PIA (M=6.95, SD=1.19) in comparison to pre-PIA (M= 3.6, SD= 1.39) with effect size (Cohen's d =3.08). The effect of psychological intervention is found to be substantially large in eliciting relaxation responses by Yoga Nidra among cancer patients.

Likewise, there was a significant difference between the pre-and post-psychological intervention assessment (PIA) in the VAS scores among spouses of cancer patients, t (20) =-3.04, p<0.001. This indicated that relaxation among spouses was higher during post-PIA (M=5.6, SD=0.82) in comparison to pre-PIA (M=5, SD=0.65) with effect size (Cohen's d =0.58). The effect of psychological intervention is found to be medium in inducing relaxation among spouses of cancer patients.

The third component of intervention included a 'couple activities schedule' focusing on improving interaction, communication and intimacy between the cancer patients and their spouses. Along with Psychoeducation and Yoga Nidra relaxation training, Couple activities were scheduled and conducted every week for 15-20 minutes, and feedback for their activity log was collected every week to assess their participation and progress in restoring normalcy in their life. Activity schedule was explained to the couples and observation and response sheets were maintained for every week. The activity was focused to improve their engagement in daily activities, and establish normalcy and revive intimacy in their relationship. Anytime, the couples were not able to participate due to distress, or other difficulties, they were encouraged to approach one another.

The psycho-education modules, Yoga Nidra therapy, and couple activities were applied in such a manner, so as to address their deeper concerns, focusing on educating and empowering them to establish normalcy in their life. The body image issues, fertility and sexual concerns were attended by the researcher from a biopsychosocial perspective and referred to the medical doctors for biomedical intervention to improve sexual functioning during post treatment phase. Gradually, the couples showed progress in overcoming the myths and misconceptions related to cancer, opened up communication, improved participation in daily life, expressed their love and affection to each other, and showed willingness to seek medical advice for the sexual concerns, and supported one another.

Reflection from a Case Study

"A 40 years old female undergoing Breast cancer treatment complains of disturbed sleep, body pain, fatigue and tiredness, and has poor body image after removal of axillary lymph nodes 4 months back. She is currently on hormonal treatment, which has disrupted her menstrual cycle. Although she feels her husband and daughter cares about her, she is unable to express her concerns, and worries about her relationship with the partner. She even thinks her husband doesn't not like her appearance, and they would never have a normal and happy life as before"

Understanding this case from a biopsychosocial conceptualisation of sexuality after cancer, the biological (somatic) factors are pain, debility, disturbed sleep; and psychosocial factors include anxiety, depression, poor self-esteem, body image and relationship concerns. She relates the cessation of menstruation with fertility and sexuality, and expressed her agony how this can be discussed this her spouse. This in turn lead to lack of communication, drift in the relationship and adversely affected

intimacy between the couples. It is observed that there is a misconception that physical closeness is prohibited after cancer diagnosis, and apparently social stigma exists about intimacy and sexual functioning in couple. Thus emphasizing the need to integrate family, social and cultural factors to address the sexual concerns in couples.

Goals of Therapy: Psychoeducation involved providing knowledge about biomedical aspects of cancer, treatment modalities, and long -term effects of treatments on sexual health. In addition, ways of improving communication by expressing unknown fears, and worries; participation in daily activities, improving emotional bonding, and discussing sexual concerns and taking medical and psychological support and assistance were equally focused.

Description of Couple Activities

Being together- The couple started with spending 10-15 minutes, sitting beside each other, having a meal and family time together, whereas, earlier the patient was confined to a room lying down in bed. Now, they sit beside each other for hours, even though the spouse would continue doing online office work or other tasks.

Participation in Common activities- Beginning from domestic chores, the family started spending time in leisure activities, watching TV, visiting temples, and planning for the day. They participated in Yoga Nidra session, which was beneficial for both patient and spouse for reducing negative emotions. Here, the partner was not delegating, or supporting the patient, but performing ‘Yoga Nidra’ together, along with the patient. This level of participation, and togetherness has generated a great bonding and support, and eased down the burden of being isolated after being diagnosed with cancer.

The couple were encouraged to recollect their good memories. For example, in one case, a couple remembered their happiness of having their first child 14 years ago, and how the lady took care of the child. The lady expressed her grief that now after being diagnosed with cancer, she is unable to take care of her family as before, to which the husband /spouse responded that she has always taken good care of all, and now he will assist her in every possible way. This has generated care, compassion, and emotional intimacy in their relationship. Further, discussing about present concerns- Post surgery marks/scars, weight gain or loss, hair and skin changes were predominantly discussed by the patient, and how they avoid meeting people, and fears that their spouse may not feel attractive or like them as before. The couples were encouraged to visit places they worship, parks, or shops in order to adapt to the present situation and accept the changes in appearance. Thus, social life was reestablished and this helped to normalise the present situation.

The couples were encouraged to open 'stress communication' discussing their difficulties, abstinence, and fears related to sexual functioning, and if there are any sexual concerns. Owing to chemotherapy and hormonal treatment, there was dryness and pain during intercourse, for which the couples were advised to consult a medical doctor. They were imparted psychoeducation to re-establish normalcy in sexual functioning aspects too. Finally, the couples were encouraged to be a support for each other in every way, thus enhancing emotional health.

Feedback

The couple activity schedule helped in building care and compassion for each other. Being available for one another, the 'hurdles' and 'difficulties' slowly faded away, and the couple were able to generate care and support for one another. This

helped to generate affection, and bonding for one another, and thus improved emotional intimacy between the couples. Body image changes, sexual distress, which were not discussed before, and the fears and insecurities about the future were also brought up. This paved way to discuss the sexual concerns such as loss of libido, dyspareunia, etc with a medical doctor for treatment. Throughout the time period, the couples showed care and concern to each other, and were compassionate, and empathetic to each other. This helped to reestablish trust, intimacy and togetherness in the relationship.

CHAPTER-V

DISCUSSION

This chapter provides an analysis of the study's findings. The chapter follows the sequence of the discussion as per the objectives of the study. In Phase 1, which is the exploratory phase of the study, the data were collected from a total of 230 subjects that includes 115 cancer patients, and their spouses. Cancer patients' and their spouses' psychological states, body image, perceptions of illness, intimacy, quality of life, and sexual (dys) functioning were all subjects of data collection. Analyses using both descriptive and inferential statistics were performed on the obtained quantitative data. In Phase 2, a psychological intervention combining Psychoeducation, Yoga Nidra, an indigenous psychotherapeutic healing technique, and couple activities was developed based on data exploration and statistical analysis. In Phase 3, data was collected from a total of 84 subjects categorized into two groups - 20 cancer patients and their spouses in the experiment group and 22 cancer patients and their spouses in the control group. Data was collected on psychological states, body image, illness perception, intimacy, Quality of life and dysfunctional sexual behavior in cancer patients and their partners, both prior to and following the psychological intervention (pre- and post-intervention assessment).

The following statistical techniques were employed: descriptive statistics, paired and independent t-tests, Pearson correlation using SPSS 26.0, multiple hierarchical regression analysis, Dendrogram (hierarchical cluster analysis), and graphs were plotted in the results chapter as needed. Phase 3 employed the paired t-test for pre- and post-intervention assessment, and effect size was calculated to evaluate the impact of psychological intervention on the subjects.

Measurement of Psychological states, Body Image, Illness perception, Intimacy, Quality of life and Sexual functioning in Cancer patients and their partners

The first objective of the study was to measure the levels of psychological states, body image, illness perception, intimacy in relationships, sexual functioning and quality of life in patients diagnosed with cancer, and their partners. It was hypothesized that there would be differences in the levels of psychological states, illness perception, body image, intimacy in a relationship. Quality of life and sexual functioning between the patients diagnosed with cancer , and their partners.The results demonstrate that not only the cancer patients, but also their spouses/ partners experience negative psychological states, body image issues. Both patient and cancer groups perceived the illness as a threat, and the diagnosis and treatment of cancer had a negative impact on the levels of intimacy, quality of life and sexual functioning in the couples.

The results indicate that the mean score of distress among the cancer patient group was in the level of strongly elevated when compared to spouse distress scores which were found to be moderately elevated .The mean scores of depression among patients were in the level of strongly elevated when compared to spouse group with a moderate elevation in depression scores.There is a moderate elevation in anxiety levels in cancer patients whereas, the anxiety scores are found to be within the normal range in the partner group. Likewise, there is a moderate elevation in the somatisation among the patient group, whereas in the partner group, somatisation scores are found to be within the normal range. Certain other research studies (de Groot et al., 2005) and (Tuinstra et al., 2004) have reported negative psychological impact and distress experienced by the partners of cancer patient. However, Verdonck-de Leeuw et al.

(2007) reported that compared to partners, patients experience higher levels of clinically relevant distress. In their 2014 study, Haun et al. discuss the effects of advanced lung cancer on couples' levels of anxiety, depression, and distress related to the disease, and explain that there is four to eight fold higher risk of depression or anxiety among cancer patients when compared to general population. Their study also points out that and patient's physical weakness and partner's sleeplessness are the main contributors for distress, and recommends partners should be assessed separetely for psychological distress. The present study results show that with respect to body image perception there is a similarity in the responses of both the patient and partner, and the mean scores obtained among the patient group and partner group were similar. An open-ended question was added to understand the the patient's perception of their body image (PPBI), and the perception of the partner about the patient's perception of Body Image (PPPPBI). Many partners have not verbally responded to this question. However, the non-verbal responses such as facial expression, hand gestures or head nodding indicated the perception of partners about the patient's body image perception. Partners expressed their worry about the condition of their spouse who is diagnosed with cancer and currently undergoing treatments (radiation, chemotherapy, or surgery), and described their views about the patient's perception towards the body image dissatisfaction owing to changes in their appearance. From the given set of responses for the semi-structured interview, it is understood that patients expressed concern about their appearance with respect to how the body image changes are received by their partner. On the other hand, the partners of cancer patients have raised concerns about the spread of the disease and the long-term consequences of cancer and its treatment, such as the removal of an organ, which may result in loss of function or disability. Previous research conducted by Brederecke, Heise & Zimmermann (2021)

compared the body image satisfaction of patients with various cancer types, taking into account gender differences, and found the risk factors for a reduction in body image. It has been noted that in men, more positive body self-acceptance was correlated with higher relationship satisfaction and lower distress related to cancer. Conversely, reduced anxiety and less distress related to cancer in women was linked to a more focused acceptance of one's body.Female partners' more satisfactory perceptions of their partner's body acceptance were found to be correlated with higher relationship satisfaction and lower distress specific to cancer. The present study also shows a direct influence of body image perception and distress levels in both the cancer patients, as well as their partners.

A study done on Illness perception among cancer survivors explored (Zhang et al., 2016) reported that illness perception did not differ by cancer type. The present study also reported illness perception is found to be high among different types of cancer, and the scores are comparable in both cancer patients group, as well as partners group. The current study's results show that patients view their illness as more threatening on the dimensions of brief-illness perception.The total score of Illness perception was found to be higher in patients when compared to partners, which explains that patients consider their illness as more threatening than their partners.

Present study reported an influence of partner’s perception about patient’s illness perception on quality of life. The current research thus highlights the impact of spouse illness beliefs on patient quality of life, and this information has more significant implications for clinical care and dyadic research. Mohamed, Winkel, and Diefenbach (2013) looked at patient and spouse illness beliefs and how those beliefs affected the patient's quality of life. They specifically looked at the spouse's beliefs

about the length of the disease and control over treatment. The findings showed that patients' quality of life had improved six months later when the spouse believed that the treatment would control their loved one's illness and the disease would last shorter.

The present study reported that both the patients and partners have reported intimacy in their relationship. PAIR instrument measured levels of intimacy in a relationship, and the current study's findings clarify that while cancer patients and their partners share similarities in terms of social, intellectual, emotional, and sexual intimacy, there are differences in terms of the levels of recreational intimacy that are noted between them. It is observed that the recreational intimacy scores are found lower in partners of cancer patients. Recreational intimacy is generated in couples by engaging in recreational activities which is not possible due to the diseased condition of patient and the spouse taking care of the patient and the other family members. Consequently, the current study's findings point to the need to investigate the demands and burden of providing care as well as assess how cancer affects social and personal relationships, which is a crucial aspect of quality of life. Manne & Badr (2008) emphasized how crucial it is to approach cancer from a relational standpoint, and discusses on couple’s intimacy and relationship processes in psychological adaptation to cancer. Research conducted by Dorval et al., (2005) evaluated that couples have reported that cancer have brought them close together.

In the present study, the section on cancer patients' and their partners' quality of life results shows that partners have scored higher in majority of the dimensions with respect to items describing quality of life (overall quality of life, general health, physical, psychological and environment), but when compared to partners, cancer patients have scored higher in social and relationship domain. This may be owing to

the cultural impact in India, where friends and relatives regularly pay visits to the patients, and extend their support and help for those in pain and suffering during the hospital stay, or home. On the other hand, the spouse, who is the main care provider has to limit his/ her social life and interaction with the outside world for being available for the patient during the treatment phase, follow ups and recovery period.

Sexual health and well-being are important and essential dimension of health continuum. The present study results on sexual functioning show that majority of the patients have reported sexual concerns, and expressed not being sexually intimate with each other for a longer time ever since they were diagnosed with cancer. The patient score of sexual experience with ASEX tool is higher which indicates higher sexual dysfunction among patients. It is found that most of the couples have reported not being sexually active as they are undergoing cancer treatment, and follow up consultation. The present research reported the sexual dysfunction aspects are comparable in both patient, and partner and found to be slightly higher in patient's group. Thus, emphasising the need to focus on 'couple' to attend to their sexual concerns, or any other difficulties. The study by Perz et al., (2014) sheds light on how cancer treatment can affect a person's sexual well-being over time. The alterations may harm one's quality of life, psychological health, and romantic relationships. According to Soloway et al., (2015), a partner is crucial in helping a patient adjust to prostate cancer treatment. The article delves into the sexual, psychological, and dyadic functioning of the prostate cancer "couple." The study analyses the disparity between patients and partners on self-reported questionnaire for sexual functioning and emphasises on how important it is to hear the voice of the 'couple' and pay attention to their needs and concerns during cancer trajectory.

Thus, the first hypothesis of the present research that the levels of psychological states, body image, illness perception, intimacy in relationship, quality of life and sexual functioning are found to vary in the cancer patient group, and the partner/ spouse group is accepted.

The relationship between the psychological states, body image perception, illness perception, intimacy in a relationship, sexual functioning and quality of life in cancer patients and their partners.

The second objective of the study aimed to investigate the relationship between the psychological states, perceptions of body image, perceptions of illness, intimacy in a relationship, quality of life, and sexual functioning of patients diagnosed with cancer and their partners. It was hypothesized that there would be a relationship between the study variables among patients diagnosed with cancer, partners of cancer patients, and between patients diagnosed with cancer and their partners.

Conventional methods for comprehending the psychosocial effects of cancer characterize the unfavourable psychological conditions and feelings that only the patient experiences. Patients who are married or in committed relationships report that their partners go through life's ups and downs, dealing with issues like job disruption, and psychological morbidities like anxiety, depression, exhaustion, sleep disturbances (Girgis et al., 2013; De Moor et al., 2017; Geng et al., 2018, Areia et al., 2019). Therefore, it is imperative to acknowledge the significance of understanding cancer within the familial and psychological framework. The present study intended to examine the dynamics of couple relationship and understand the correlation between the patient and partner dimensions on several psychological variables. The correlation matrix generated using Pearson’s correlation method (Table 12) and the result section

provided a thorough explanation of the correlations between the variables in the cancer patient group, the cancer patient spouse group, and the cancer patient and spouse groups.

There was a strong positive correlation found between psychological states such as distress, depression, anxiety and somatization. There is a positive correlation between psychological states and body image; significant correlation was seen between anxiety and body image, depression and body image and distress and body image, where p is found significant at 0.01 level. There was a correlation found between somatization and body image in the patient group, where p is significant at 0.05 level. This explains that higher the negative psychological states, higher would be the body image issues, and vice versa. The results supported by a systematic review by Paterson et al., (2016) conducted with the aim of synthesizing the current state of the science regarding body image in younger women who have been diagnosed with breast cancer. A review of thirty-six articles revealed a correlation between psychological and physical distress and a negative body image. Even though age and type of treatment had a big influence on body image, it's been shown that younger women's partner relationships and sex and intimacy were also impacted by body image. The current study's findings indicate a strong correlation between problems with body image and negative psychological states.

There was a significant negative correlation found between psychological states of cancer patients and the quality of life. A high correlation was found between depression and patient quality of life. Likewise, anxiety, distress, and somatization were significantly correlated with quality of life in the patient group. This explains that

higher the score of psychological states such as depression, anxiety, distress and somatization, lower is the quality of life among the patients diagnosed with cancer.

A study conducted by Mochizuki, Matsushima & Omura (2009) reported an association between psychological state and quality of life in head and neck cancer patients during the perioperative period and reported that anxiety was greatest before surgery, while depression was greatest immediately after surgery. Quality of life in the physical, and other domains decreased immediately after the surgery, and quality of life in most of the domains improved in a month time. Another study by North House et al. (2007) evaluated the psycho-social experiences of patients and their spouses during the three stages of prostate cancer: newly diagnosed, biochemical recurrence, and advance stage. The results showed that patients' and spouses' quality of life, assessment of illness, resources, symptoms, and risk for distress were similar. The patients' spouses reported the lowest emotional quality of life, while the patients themselves reported the lowest physical quality of life.

There was a significant positive correlation found between the psychological state distress and illness perception, which shows that higher the patient perceives their illness as threatening, higher would be their distress levels. Saritas & Ozdemir (2018) conducted a study with a sample of 318 cancer patients and measured illness perception and anxiety using standardised measures, and illness perception was found to affect anxiety. According to reports, people who perceived their illness more negatively tended to experience higher levels of physical symptom distress and lower levels of optimism. Prior studies conducted by Kaptein et al., (2015) have demonstrated a clear correlation between the perception of illness and key outcomes related to cancer, such as symptoms, distress, risk perception, fear of recurrence,

adherence to treatment, seeking assistance from traditional healers, satisfaction, and quality of life. Chittem, Norman, and Harris (2015) examined the psychological reactions of Indian cancer patients who reported knowing or not knowing they had the disease using the common-sense model of illness representations. According to the study, patients (54.1%) who were not aware of their diagnosis had higher anxiety and depression levels. According to moderated regression analyses, there were several relationships between illness perceptions and anxiety/depression that were stronger among patients who said they were unaware they had cancer.

Results of the present study with respect to illness perception recorded that patient's had scored higher in the 'treatment control' aspect of illness perception, whereas, the scores are low in the item exploring 'personal control' of illness. So, they believed that cancer treatment had a greater control than their personal control for illness. Soler-Vilá, et al. (2009) throw light on how personal and cultural beliefs can influence whether patients identify a need for help for distress management. Previous research conducted by Lord et al., (2012) points that patient's health and cancer beliefs are known to affect their decision making, treatment adherance, psychological distress and clinical outcomes.

The experience of cancer disease and treatment brings changes in terms of one's sexual health and wellbeing. The findings of the present study also show a correlation between distress and sexual dysfunction which explains that higher the level of distress among the patients, higher would be the sexual dysfunction. Previous research studies have also reported psychological distress and sexual dysfunction are concomitant in cancer. According to the narrative synthesis, Malandrone, et al. (2022), vulvar cancer has a significant impact and is more common in women. It also has been

shown to have a negative impact on sexuality from a psychological, behavioural, and physical standpoint. The above study recommended to implement an integrated model to address their unmet needs. Whereas, another research (Soleimani et al., 2018) evaluated Female Sexual Function Index (FSFI) & Female Sexual Distress Scale (FSDS), and sexual distress and sexual functioning were not found to be related in the study. The type of cancer, socioeconomic status, and social support are among the other variables that have been found to impact sexual functioning and sexual distress.

One of the basic psychological needs, according to Thalberg & Maslow (1964) and Prager (1995), is intimacy. Intimacy in a relationship is explored in the present research and it was found that emotional intimacy of patients shows a positive correlation with quality of life which explain that better the emotional intimacy, better would be the quality of life among cancer patients. The two dimensions - sexual intimacy and sexual experience have a strong negative association. The results of this study demonstrate that, among cancer patients, sexual dysfunction rises in proportion to a decrease in sexual intimacy and vice versa. Here, a high score for sexual experience points to a high level of sexual dysfunction.

The correlation matrix table demonstrates the significant correlation between the patient's and partner's (spouse's) psychological states. Significant correlations were found between depression of patient and partner, distress of patient and depression of partner, anxiety of patient and depression levels of spouse, distress of patient and distress of partner, depression of patient and distress of partner. The positive relationship between psychological states of patient and partner explains that with an increase in distress, depression and anxiety levels in patients, there is relative increase in the partners' distress and depression levels. Prior studies by Chambers et al. (2013)

detail the frequency of psychological distress in couples following localized prostate cancer and highlight the differences in distress correlates between patients and female partners. Whereas her partner's degree of distress matters most to female partners, masculine self-esteem is the most important factor for men. The lived experiences of breast cancer patients are discussed in another study by Sprung, Janotha, and Steckel (2011). Couple distress is also covered, and the authors stress the importance of identifying couples who are at high risk of experiencing severe relationship distress and of being aware of the "silent suffering" that cancer patients and their partners endure. Finally, the authors stress the need for health care providers to implement effective treatments to address couple distress.

There was a significant positive correlation between body image of patient and partners' perception of body image of the patient, which indicated that when the patient reported severe body image issues, the partner(spouse) also perceived that severe body image issues were perceived by the patients. The patient body image is also positively correlated with illness perception of spouse which explains that when patient reports high (severe) body image issues, the perception of the partner about patients' illness perception as more threatening was also high and vice versa. Previous studies exploring body image and illness perception in cancer patients and caregivers have similar findings. According to a study by Chiu et al. (2023), breast cancer patients' perceptions of their condition, level of resiliency, and body image were examined over a five-year period. The results of the study demonstrated a strong correlation between resilience and either body image or illness perception, and they also demonstrated that, because illness perception is mediated by body image, improved resilience is highly predicted by illness perception.

Body image has an impact on intimacy in a relationship, and a previous study conducted by Male, Fergus & Cullen (2016) describes that a substantial proportion of women endorse difficulties with body image issues, and sexual and reproductive problems, and these are influenced by a range of factors such as age, illness stage, treatment, relationship status, and others. It was found in the study that compared to the healthy population, women with breast cancer had a worse perception of their bodies and a higher incidence of sexual dysfunction. Patients' perceptions of their bodies and their partners' levels of social, sexual, and conventional intimacy are significantly correlated. Similarly, there is a positive relationship between a patient's body image and their partners' quality of life.

The current study found a positive correlation between a patient's quality of life and their partner's level of sexual intimacy. This means that a patient's quality of life would rise in proportion to an increase in sexual intimacy as reported by their spouse or partner. A positive correlation has been observed between patient emotional intimacy and partner Quality of life (0.432) which explains that as the emotional intimacy increases in patient, the quality of life improves in partner. A study conducted by Gleneara &Taub (2016) describes one of the most important types of intimacy during cancer treatment is emotional intimacy. Maintaining an open communication through treatment will help to reduce the feelings of resentment, anxiety, guilt, with drawl, helplessness, and over all stress for both patient and partner.

In a qualitative study based on focus group discussions, Sanders et al. (2006) describes the long-term intimacy needs in cancer patients. The couples shared their opinions about their current intimacy and relationship needs as well as their individual and pair experiences. The study's conclusions highlight the gender-specific needs of

individuals and place special emphasis on the intimacy and relationship needs that are particular to each gender and pair, with special emphasis on the needs for intimacy and relationships that are specific to each gender and pair. However, Intimacy in cancer patient and spouse is not much discussed, especially in the Indian context where family needs are considered more important and attended first than intimacy in a relationship between the couple.

A substantial positive correlation was found between the patient's and spouse's quality of life, indicating that when the patient's quality of life increases, the spouse's quality of life also tends to improve accordingly. In a longitudinal study (Song et al., 2011), the quality of life of partners and patients with prostate cancer was examined. It was discovered that as a couple's uncertainty and the patient's sexual and hormonal symptoms related to prostate cancer decreased, as well as their social support and dyadic communication related to cancer increased, so did the couple's quality of life. There was a significant positive correlation between patient sexual functioning and spouse sexual functioning which demonstrates the journey of intimacy together. Reese (2011) noted in his research that regardless of the survivor's prior sexual history, partners of cancer patients have reported worsening sexual functioning following the disease. The study conducted by Gilbert et al. (2011) revealed that the couples' sexual relationship has been negatively impacted by inadequate communication, performance anxiety, fear of rejection, lack of sexual desire, partner distress and fatigue, and role strain. Although the changes in sexuality were linked to reports of sadness, anger, rejection, self-blame, and a lack of sexual fulfilment, there were also positive effects like accepting the changed sexual relationship, according to Sandquist et al. (2009), who explored changes in sexuality and intimacy after the diagnosis and treatment of cancer.

Previous research by Hordern &Street (2007)) narrates that diagnosis of cancer may change the way a person feels about themselves, their body, and their significant relationship with others at sexual and intimate levels. In a study, Wittmann (2016) looked at partner and relationship issues as well as emotional and sexual health in cancer patients. According to the study, a "couple" is defined as a unit that is adjusting to how cancer has affected their most personal relationship aspects, such as their sexuality. Cancer related- distress management and recovery of sexual intimacy are the two areas that emerged in the findings of the study. The study emphasises on the need to implement appropriate measures and interventions including partners to attain a 'new normal' in sexual health care aspect in cancer.

To summarise, the correlation matrix explains that there is a significant relationship between the variables such as psychological state, body image, illness perception, intimacy, sexual experience and quality of life in the patient group, partner group, as well as between patient and partner group. Thus, the second hypothesis that there exists a relationship between cancer patients' and partners' psychological states, body image, illness perception, intimacy, sexual functioning, and quality of life is accepted.

Further, t-test was performed with data collected from the patients diagnosed with cancer and their partners, that are paired together (as a couple). The dyad, being a couple will share common experiences such as psychological states, perception related to body image, illness perception, intimacy, quality of life and sexual functioning and may have common factors (may be hidden) in the responses of the patient and the partner. Paired t-test results (Table 13) show significant mean differences for the variables, excluding the mean differences for social intimacy, intellectual intimacy,

and convenience scale. This points out that the intimacy generated in couples due to intellectually stimulating as well as recreational activities, as well as the socially desirable answers given to the sets of questions in personal assessment of intimacy in a relationship (PAIR) by cancer patients and their partners are similar, and there are no variances in the responses recorded in the study. The results indicate the need for opening communication and engaging them in activities that are enriching and entertaining for them to attain normalcy in their relationship and improve intimacy. Researchers Reisman & Gianotten (2017) looked into the sexual effects of cancer and treatment. They found that while sexuality may not be a cancer patient's primary concern, over time, changes in sexual function and relationship problems cause patients to realize the effects of cancer and treatment on sexuality. As a result, a stepdown regression approach was used along with multiple linear regression analysis to predict the contributors. Their work provides insights and information to equip the healthcare providers and physicians to offer effective treatment to address the sexual and relationship concerns.

A significant correlation was found between the dimensions of patient and spouse in the present study. As a result, a stepdown regression approach was used along with multiple linear regression analysis to predict the contributors. Regression models (Table 14 &15) explained that lower levels of negative psychological states predict a better quality of life for the couple. The model explains that a lower value of negative psychological state such as distress, anxiety, better functionality, recreational intimacy in patients, and lower levels of depression in the spouse predicts better quality of life. Spouse depression emerged as an important predictor for Patient’s Quality of life in the current research. On the other hand, the spouse/partner’s quality of life is shown to be determined not only by their psychological states such as

depression, partner's perception about patient's illness perception and body image, but also social intimacy in partner was observed as a predictor for quality of life. Eliminating patient's variables in the step own regression model, it was observed that the patient's recreational and intellectual intimacy emerges as an important predictor for spouse quality of life. This emphasises the need for developing intervention to reduce the negative psychological states of both patient and partner, improve cognitive representation of body image, and illness perception and also engaging the couple in intellectually stimulating and recreational activities to establish intimacy that will help to improve quality of life.

It is understood from the results (Table 16) that Patient's sexual experience or sexual functioning aspect may not match with the spouse's sexual experience/ functioning. The emotional interpretations of sexual experiences may be different, thus contributing to the differences in the values of patient data and spousal data. The results (Table 17) also demonstrated that patient seems to have given greater socially desirable answers/ responses, which predicted lower sexual satisfaction in spouse. Out of embarrassment, patient may have given socially desirable answers, while actually the couple have sexual dysfunction.

In a qualitative study, Lindau et al. (2011) investigated the perspectives of cancer patients and their partners on how lung cancer affects emotional and physical intimacy, as well as the ways in which intimacy influences the experience of living with cancer. The study detailed how clinical care providers and married couples with lung cancer communicated about intimacy and sexuality. Care providers and couples affected by cancer report that sexuality issues are extremely common, but few are reported. Despite not being able to physically be with their spouse, the couples talked

about the negative effects of cancer and its treatment on their bodies and minds as well as its benefits, which included an increase in their appreciation for each other. According to previous research (Baucom et al., 2015), a couple's capacity for effective communication is crucial to their ability to adjust to the experience of illness. Thus, apart from Psycho-education for the information needs and Yoga Nidra for the psychotherapeutic healing process, facilitating couple interactions and encouraging participation through activities emerges as an important component in the couple intervention for the present research.

For a better understanding and interpretation of data (couple data), Hierarchical cluster analysis, and dendrogram representation is made in Figure 18. Using Dendrogram, the variables or features are clustered together based on the data of cancer patients and partners, N=115 couples, v/f=30 (15 related to patients and 15 related to partners' variables or features. Taking tolerance as 3.5, a total of six clusters are formed. The first cluster is formed by grouping the variables 12 to 3. In this cluster, the variables such as illness perception, quality of life, all types of intimacy, sexual experience/functioning of both the patient and partner; the psychological states of the patient such as distress, depression, anxiety and somatisation as well as body image of partner are similar, which means the responses recorded and scores obtained by the subjects for these variables or features are similar. Variables 7, 27, 8, and 9 represent Partners' distress, depression, anxiety and recreational intimacy and are grouped as the second cluster. Cluster two represents the partner's responses and the patient's responses do not find any similarity with the spouse/partner's responses. The rest of the variables 11, 1, 10, and 6 (Patient body image, Patient performance scale, Partner somatisation and partner performance scale) stand apart as the individual cluster. This explains that the responses for these variables such as Patient body image, Patient

performance scale, Partner somatisation and Partner performance scale are not similar and the scores obtained by the subjects are not similar. Previous research on cancer patients and partners does not seem to have explored such details, and the present study provides the information and insights regarding the emotional representation of cancer disease in couples dealing with it, and also brings up their concerns pertaining to body image issues, intimacy and sexual functioning.

Thus, in the light of Descriptive analysis, Hypothesis testing (Correlation, & Paired t-test), Inferential Statistics (Multiple Linear Regression), and Hierarchical cluster analysis (Dendrogram) in the first phase of the study, an intervention design is conceptualised for the second phase of present research.

Objective 3 aims to develop a health psychology intervention focusing on improving the negative psychological states, body image. Illness perception, intimacy in a relationship, quality of life and sexual functioning among cancer patients and their partners.

Studies indicate that although physical and psychological symptom screening is included as a standard protocol in cancer care, however, evidence-based psychosocial interventions and a systematic response to the distress screening are not combined to comprehensive cancer care (Vitek, Rosenzweig & Stollings 2007; Ceres et al., 2018; Sender et al.,2020). Recently, Sexual health and relationship needs are acknowledged and accepted as an important aspect in Oncology setting (Gorman et al., 2022). Cancer-related somatic effects related to sexuality have been found to frequently result from treatment side effects or the disease's progression. The associated psychological factors are distress, body image changes, illness perception, low sexual self-esteem, and the social factors such as intimacy in a relationship,

mutual support, openness, sexual and intimate behaviours are partnered in the couple dealing with cancer. Hence, development of couple- intervention seems to be the need.

For developing psychological intervention for couples in the Phase II of the study, it becomes important to recognize the ‘relationship intimacy model’ to comprehend how relationship variables affect the psychosocial adaptation to cancer (Reiss & Shaver, 1988). The model places a strong emphasis on partners relating to one another as "spouses" as opposed to "patients" and "caregivers." The model integrates research from social and clinical psychology and considers important sociodemographic elements, including age, education, cultural characteristics, diagnosis and treatment phases, and life stages. The relationship-intimacy model also highlights how crucial it is for both partners to work toward keeping the relationship stable in order to improve it. The intimacy interpersonal process model is another model that is pertinent to the research. The definition of intimacy, according to Manne et al. (2004), is the process through which a person communicates significant, self-relevant feelings and information to another person and, based on that other person's response, feels heard, validated, and cared for. This model highlights two essential elements of close relationships: partner responsiveness and self-disclosure. "Intimacy" was assessed as a mechanism by Manne, Badr & Kashy (2012) for the effects of relationship-enhancing and relationship-compromising communication on a couple's psychological distress. The study's conclusions showed that a couple's psychological distress can be significantly impacted by how they discuss cancer-related issues and how much one or both partners choose to keep the conversation about cancer-related issues to themselves. These factors can either increase or decrease relationship intimacy. Thus, from both clinical and psychological perspective, it is found necessary

to develop couple-focused psychological intervention and must target specific ‘issues’ and address the relationship and needs of both partners.

The results section presents the description of developed intervention in the second phase of the research. The intervention is conceptualised with a relational approach, including both the patient and partner needs, and a ‘CARE Model’ has evolved. The psychological intervention package based on ‘CARE’ model includes three components: Psycho-education, Yoga Nidra (Indigenous method of Psychotherapeutic healing) and Couple activities. CARE Model focuses on empowering couples with Psychoeducation, provides healing touch with Yoga Nidra, and reviving relationship, couple-communication & interaction with couple activities, enhancing their quality of life and lessening psychological discomfort in the process.

In order to improve psychological effects, quality of life, and sexual functioning in patients with gynaecological cancer, Chow et al. (2016) conducted an investigation into evidence-based research on psychoeducational intervention. The results of the study indicate that psychoeducational therapies are useful in treating depression symptoms and enhancing the mental health of gynaecological cancer patients. Previously, Barre et al. (2018) investigated the relationship between stress and cancer patients' quality of life. They developed a medical and psychological intervention, and oncologists helped design the psychoeducation modules and materials. For the current intervention study, in the same line, a comparable representation that combines audiovisuals and print and visual psychoeducational materials was created specifically to raise awareness about sexual health and intimacy among the cancer-affected couples. The psychoeducation module for the present research included comprehensive cancer care segments that imparted knowledge about

self-care regime, instructions for better pain management, and cancer related fatigue that are frequently reported among cancer patients, addressing distress reduction and disturbed sleep pattern, adherence to a healthy diet and activity, improving communication and expressing intimacy needs in cancer. Thus, the psychoeducational modules are based on biopsychosocial model for cancer care, integrating biological, psychological and social factors that plays a significant role in health and disease.

In a study, Andersen et al. (2007) assessed how psychological intervention reduced distress and noted that cancer patients' health had improved. by reducing patient's emotional distress (psychological), and enhancing their functional immunity(biological), and improvement in performance status and symptomatology, including toxicity from cancer treatments (health outcomes). The present research implements the indigenous Indian relaxation method called 'Yoga Nidra', a psychotherapeutic practice that involves a specific set of steps for the guided meditation and visualisation, which evokes relaxation response within the body and mind.

Cancer patients may benefit from using Yoga Nidra as a therapeutic approach. 'Yoga Nidra' or 'yogic sleep' is a 'Pratyahara technique' in which the distraction of mind is constrained, and the mind goes to a deep relaxed state, which is named as' hypnagogic state of sleep'. This induces a calming effect on body and mind and has profound benefits in treating chronic illness, psychological disorders, and psycho somatic diseases. 'Shavasana pose' preparation is the first step in the practice. Next, a person makes a personal commitment to action, or 'Sankalpa', regarding their resolution. Subsequently, one focuses attention on different body parts (physical level), takes breaths (breath level), remembers different emotions and sensations (mind level),

visualizes using guided imagery, restates the personal resolution (Sankalpa), and ends with the practice feedback session (reflect on the experience).

Ananad, George and Raj (2015) have established the effectiveness of Yoga Nidra on improving quality of sleep on cancer patients. D'Cunha et al. (2021) describes how Yoga Nidra is helpful in mitigating stress in women undergoing curative radiotherapy for cervical cancer. The neuro-psychobiological response to stress, the management of symptoms through clinical hypnosis and meditative states, and anxiety and psychosomatic symptoms in palliative care are the topics of another research (Satsangi & Brugnoli, 2018). While Kumari, Pandey, and Tripathi described the therapeutic practices of yoga Nidra and its psychological impact in treating physical and mental illnesses, Ozdemir & Saritas (2019) looked into the impact of Yoga Nidra on issues of self-esteem and body image.

Patients with cancer frequently report fatigue, pain, side effects from treatment, and emotional distress, which frequently takes the form of anxiety, depression, and fears of dying or the disease progressing (Rosenberg et al., 2014). Similar periods of stress and uncertainty are experienced by partners of cancer patients, and research (Baucom et al., 2012) indicates that communication within a couple aids in the patient's and partner's adjustment to their illness. Heinrichs et al. (2012) talked about not only about cancer education, but also couple skill intervention for cancer distress reduction. In the present study, couple activities were structured to improve couple communication and compassion, accepting and aiding each other, reviving the relationship, and restoring harmony, generating emotional support, enhancing emotional health and empowering one another while dealing with the challenges of cancer. Couple-based interventions have been shown to be beneficial for cancer-

affected couples (Regan et al., 2012). These interventions were most successful in enhancing couple communication, reducing psychological distress, and enhancing relationship functioning; however, they had little effect on social adjustment or physical distress.

Thus, the third objective to develop a health psychology intervention is attained integrating indigenous method of relaxation (affective component), Psycho-education (cognitive component), and couple activities (conative component) to enhance psychological states, body image, illness perception, intimacy, quality of life, sexual function in cancer patients and their partners.

The fourth objective of the study is to administer the developed intervention on cancer patients and their partners, and do a pre-intervention assessment and post-intervention assessment to determine the effectiveness of the developed intervention.

The fourth objective to administer and test the developed intervention is done in the Phase III of the study. The hypothesis was made that there would be a positive impact of developed intervention on patients diagnosed with Cancer, and their partners. The results showed improvement in psychological states, body image, illness perception, quality of life, relationship and sexual functioning after administrating the developed psychological intervention on cancer patients, and their partners. The following paragraph discusses the impact of modules of health psychology intervention developed for the couples in the present research.

Impact of Psychoeducation on Couple dealing with Cancer

Cancer information scale for couples with cancer was constructed to evaluate the myths and misconceptions about cancer, and psychoeducational modules was developed to address the misconceptions related to cancer and sexuality for the present study. The paired t-test done with respect to CISCC (Cancer Information Scale for Concerns of Couple dealing with cancer) demonstrates the substantial difference in cancer patients' CISCC scores between the pre- and post-psychological intervention assessment (PIA). This suggested that patients' misconceptions were less prevalent during the post-psychological intervention assessment (PIA) than they were during the pre-PIA (PIA). The CISCC scores of spouses of cancer patients also showed a significant difference between the pre- and post-psychological intervention assessment (PIA) periods. This suggested that patients' misconceptions were lower post-assessment (PIA) than pre-assessment (PIA). Therefore, it is discovered that psychological intervention has a significant impact on dispelling myths and misconceptions among cancer patients and their partners.

In the present study, cancer patients and their partners were provided with factual knowledge to have an understanding about the disease, and comprehensive cancer care, including self-care, effective method for pain, and cancer related fatigue, adherence to diet and daily activity, and breaking the taboo of not sharing personal space, and expressing love and affection; such couples were found to have more clarity with reference to the myth and misconception, and look forward for a normal and happy life. Information booklets, audio visuals where doctors and psychologists help them to understand the sexual health aspect helped to reduce their anxiety, stress, and provided the information needed to attain normalcy in their life. Prior research

indicated a significant contributing factor to distress was a lack of knowledge, making information about their illness and available treatments crucial (Boberg et al., 2003). Research has also shown that psychoeducation is economical. A study conducted on breast cancer patients (Dolbeault et al., 2009) showed that a psychoeducational intervention could be both feasible and successful in minimizing the side effects of the treatment. Research on psychoeducational intervention and its benefits is presented by Fowzy & Fawzy (1999). It also confirms that psychoeducation is a valuable strategy that can increase treatment compliance in the early stages of diagnosis (Roter et al., 1998) and lessen symptoms like depression, anxiety, pain, nausea, and vomiting (Devine & Westlake, 1995). In an older study, Compass et al (1998) examined a sample of psychological interventions from health psychology that have been scientifically proven to be effective in treating diseases like cancer and chronic pain. Psychoeducational intervention is found to be helpful in promoting a better quality of life and symptom experience among 48 female breast cancer survivors as they transitioned to survivorship as reported by Park & Bae (2017). Guarino, et al. (2020) point out the effectiveness of psychological treatments in women with breast cancer, explaining that women's sexuality is affected by breast cancer diagnosis and treatment in a variety of ways, both physically and psychologically., and recommends incorporating psychological treatment to attend to the sexual concerns of couples affected with cancer in the comprehensive cancer care.

Impact of 'Yoga Nidra'- as a Psychotherapeutic intervention

Yoga Nidra is an indigenous method of healing that combines elements of cognitive and behaviour therapy with guided imagery, and mindfulness training. Result section shows a deeper relaxation response generated with Yoga Nidra. The paired t-

test done with respect to scores of relaxation using a Visual Analogue Scale (VAS) demonstrates the substantial difference in cancer patients' VAS scores between the pre- and post-psychological intervention assessment (PIA). The effect size of the psychological intervention is found to be medium in the spouse group and large in the patient group. Thus, both the patient and partner group are benefited with Yoga Nidra as a psycho-therapeutic healing experience.

Yoga Nidra has four distinct levels of effectiveness in the treatment of cancer. First, by using the visualization technique to release the subconscious and unconscious matter that has been repressed, which aids in bringing the repressed unconscious matter into the present moment of awareness. Secondly, by pranic healing by awakening the subtle bio-plasmic energy ‘prana’. Third, by mental healing through the technique of visualisation, and activation of dormant mental power. When the body and mind is constantly visualised to be healthy and active, the inherent capacity of mind unfolds and actual healing begins. Fourthly, by promoting will power and optimism by making a ‘Sankalpa’. The positive affirmation changes all the negative repercussions, and brings a new light and energy to one’s life. As a result, the Yoga Nidra technique has curative, promotive, and preventive effects.

According to the findings of the current study, the training and instructions given for psycho-therapeutic relaxation ‘Yoga Nidra’ by the health psychologist, and the subsequent supervision and interaction with the professional psychologist have contributed to improved sense of relaxation, and motivated the couples to continue their practice with the same enthusiasm on their own after being trained. The practice of Yoga Nidra for 6 weeks, that included 2 weeks of training and 4 weeks of practice has shown immense benefits not only in inducing deep relaxation, but also in clearing

of repercussions in their mind. A single disturbing thought about body image, or perceiving illness as a threat can cause a chain reaction, and disturb the physiological parameters of body and mind. Yoga Nidra's most powerful technique of substituting negative thoughts with a positive affirmation to bring a sense of peace and acceptance to the individual. The couples were trained to practice 'Yoga Nidra' together, and this seems to have a strong bond and sense of belonging to one another, thus helped to improve intimacy.

Studies support the usefulness of relaxation techniques as a part of psychological intervention. Empirical studies conducted over the course of fifty years or more have shown the advantages of relaxation training, even in the acute stage of cancer treatment (Cotanch, 1991; Carey & Burish, 2004). Previous research (Andersen et al., 2004; Shaprio & Recht, 2001) explains the burden of distress experienced by cancer patients. To reduce distress and maintain treatment compliance, Holland and Alici (2010) suggested psychosocial and behavioural interventions in addition to pharmaceutical ones, as doing so significantly improves the quality of cancer care. Psychological interventions have been found to be helpful in reducing the emotional distress experienced by cancer patients

Impact of Couple activity

The present study explores and identifies the barriers that has reduced couple's interaction, communication and intimacy, thus takes a pragmatic approach to overcome the difficulties through a personalised activity schedule. Beginning from simple tasks of participation in daily activities, such as being together and spending quality time with one another, recollecting past memories and sharing their experiences, the couple activities slowly progressed to 'stress communication' where

couples were encouraged to express their worries about the present situation and challenges after cancer diagnosis, and treatment. The barriers for sexual health and functioning reported by the patients were majorly physical symptoms such as pain, discomfort, fatigue, and general debility. Psycho-social concerns such as worries and apprehension about total cure, stigma about cancer, misconception not to get closer with spouse, body image issues, loss of libido, low self-esteem, and lack of hope about future were expressed. The apprehension and worry about future, and concerns such as body image issues and sexual concerns were expressed, and the researcher addressed some of them and suggested to seek medical opinion and treatment by the consulting doctor.

Emotional intimacy as a key drive towards the sexual activity was explained in Basson's Sexual model (Basson, 2001; 2015). Previous research conducted by Dorval et al. (2005) also reported that couples have disclosed that cancer have brought them emotionally closer to one another. Previous research that focused on couple intervention comprises mainly of psycho-educational modules, along with some exercises for the couple focusing on general improvement, and adaptation with cancer (Li et al; 2020; Wettergren, et al; 2020), whereas, the couple activities in the present study helped to overcome the barriers, which are biological (somatic symptoms), psychological (unexpressed worries), social and cultural (stigma about cancer). The activities generated cohesion, cooperation, and compassion between the couples, thus generating emotional intimacy, trust and affection for one another, and facilitated in reviving intimacy in the relationship.

The World Health Organization (WHO, 2006; Edwards & Coleman, 2004) states that "Sexual Health emphasizes the integration of the somatic, intellectual, and

social aspects of sexual being in ways that are positively enriching and enhance personality, communication, and love." Traditional conceptualizations of sexuality are based on the "biomedical model," which treats the disease process in terms of the sexual response cycle (Decker, 2002). However, due to the complexity of how cancer affects sexuality, a full understanding of post-cancer sexuality concerns is required, and the traditional "bio-medical model" is unable to provide this understanding. It was crucial to conceptualize a "bio-psychosocial model" that integrates biological, psychological, and social factors and the cultural context in which these symptoms manifest to create an effective intervention to deal with these symptoms.

Studies like Mercadante et al. (2010), Kingsberg et al. (2017), and Sadovsky & Nusbaum (2006) offer a concise summary of the biopsychological conceptualization of sexuality after cancer. These studies highlight the connections between cancer and sexual functioning. Post-cancer somatic changes in sexuality that are frequently encountered and have a biological basis include erectile dysfunction, early menopause, painful sexual relations, low libido or sex drive, and sterility. Surgery, radiation, chemotherapy, or hormonal cancer treatments frequently result in these physical changes in sexual functioning, which are caused by nerve or organ damage or a disturbance of hormone balance (Tierney, 2008). Additional research (Henson, 2002; Reese et al., 2011) clarifies that side effects from treatment, like pain, nausea, and fatigue (CR-F), can also affect a person's desire and ability to engage in sexual activity. Another research shows that psychological issues like anxiety, depression, altered body image, and distress are frequently present and can contribute to low desire, erectile dysfunction, and lower sexual self-esteem (Andersen, Woods & Copeland, 1997; Stein, Syrjala & Andrykowski, 2008).

Researchers such as Gilbert, Ussher, & Perz (2011) and Pelusi (2006) provide an explanation of the negative impact of body image on sexual health and the research done on female breast and gynaecological cancer survivors. According to Galbraith & Crighton (2008) and Pelusi (2006), physical modifications such as hair loss, weight gain or loss, organ mutilation, scars from surgery, and altered appearance can all lead to diminished perceptions of masculinity or femininity. According to another study (Duffy, Allen, & Clark, 2005), survivors of cancer struggle with questions like "Can I have biological children?" and "Will my partner be disappointed?" as well as "How can I explain this to others." Thus, changes to body image, and identity owing to cancer may negatively affect the ‘sexual self-schema’, and may cause lowered sexual self-esteem which may lead to sexual complications (Yurek, Farrar & Andersen 2000).

Social factors are crucial in determining sexuality and intimacy in couples coping with the effects of cancer, as many intimate and sexual behaviours are shared by the partners. Research shows that a couple's pre-treatment relationship satisfaction, intimacy, mutual support, and open communication predict post-cancer intimacy (Manne et al; 2011). Another important aspect is to understand the constructs of sexuality and intimacy in cancer. Previous research (Hordern & Steel, 2007; Hordern, 2008) emphasizes on the need to regard patients as people with sexual and intimate needs, and health professional must engage in communicating about sexual concerns and related issues in the clinical setting, and initiate action to address to the intimacy needs in cancer.

The 'CARE Model' intervention provides psychotherapeutic healing for the body and mind by addressing the psychological and social factors that impact sexual functioning and overall quality of life. The myths and misconception pertaining to

cancer and sexual functioning were assessed, and psychoeducation modules specially developed to address these concerns were imparted to them, thus emphasizing on improving psychological health, intimacy in relationship, and quality of life. The psycho-education modules, along with practice of therapeutic Yoga-Nidra, and couple activities focused to help in their recovery from cancer and reviving relationship and intimacy, and improving quality of life in a significant manner. The couples had given the feedback that the training provided to them helped to open communication, and express their feelings to one another. While Psycho-education focused to equip with the knowledge of cancer care, Yoga Nidra helped in psycho-therapeutic healing and couple-based activities facilitated the couples to walk holding each other's hand through the journey of cancer, being compassionate and caring for each other. Thus, the third and fourth hypothesis that there would be a positive impact of developed psychosocial intervention on patients diagnosed with cancer and their partners is accepted,

Conclusion

Cancer is more than just a disease that can be described in terms of organ, tissue, and cell pathology. When discussing cancer, it is important to consider how family, friends, society, and religion view the underlying illness. By focusing on the psychological, social, and spiritual factors that affect cancer patients' and their loved ones' quality of life, the specialty of psycho-oncology plays a crucial role in a multidisciplinary approach to cancer care. The understanding and conceptualization of cancer by the patient and family members plays a major role in the healing and recovery process. For the best psycho-social care, routine cancer care, rehabilitation,

and treatment should all employ an interdisciplinary, patient-centered comprehensive cancer care model.

The present study is specific to the culture, and more suitable in the Indian milieu addressing the concerns of couple dealing with cancer. The present research explores the affective, cognitive and conative aspects of psychological and sexual health concerns in couples affected with cancer. The study is unique, conceptualised with a relational approach in developing an effective health psychology intervention with a biopsychosocial perspective.

Effect of developed interventions such as Psycho-education, Yoga Nidra and Couple activities were evaluated by doing a pre and post assessment of questionnaires CISCC, VAS and couple activity participation, and response sheets. Reducing myths and misconceptions among cancer patients is found to be a significant benefit of psychological intervention. The CISCC scores of spouses of cancer patients also show a significant difference between the pre- and post-psychological intervention assessment (PIA) periods. The effect of psychological intervention is substantially large in eliciting relaxation responses by yoga nidra among cancer patients. The relaxation response generated with the psychotherapeutic intervention "Yoga Nidra" among cancer patients and their partners was recorded with a visual analogue scale. When it comes to helping spouses of cancer patients relax, psychological intervention has an average/ medium effect.

The developed intervention is tested and found effective in addressing the psychological, and sexual distress in the couples diagnosed with cancer, thereby, improving their quality of life. The mean differences between the pre- and post-psychological intervention assessments (PIA) of psychological states, perceptions of

body image, illness perception, intimacy in relationship, sexual functioning, and quality of life are statistically significant. There is a substantially large effect of the developed psychological intervention in most of the dimensions, except that it shows medium effect on Body image perception, Sexual intimacy, Quality of life, and Sexual (dys)functioning among cancer patient group. Likewise, the developed intervention pre-test and post-test analysis shows a large effect of the developed psychological intervention in most of the dimensions, except that the effect size is found to be small in social intimacy, and effect size is medium on Quality of life among the partner/ spouse group.

Implications & Recommendations

The study provides testimonial to develop an integrated approach for cancer care, which is based on biopsychosocial perspective, and integrates indigenous method of healing through 'Yoga Nidra', 'Psycho-education' and 'Couple-activity schedule' is developed with the guidelines of cognitive and behavioural principles in psychology.

Cancer patients being vulnerable to psychological distress and sexual dysfunction is a fact largely accepted and acknowledged. Somehow, it was not been adequately addressed. Sexual dysfunction can appear in all phases of cancer, commonly known as physiological origin and as a result of oncology treatment and surgery. Whereas, psychosocial factors like psychological states, illness perception, body image issues, dimensions of the relationship, and quality of life are also largely known to contribute to sexual functioning among patients diagnosed with cancer. But there is a lacuna of research in this area. The present research examined the psychosocial correlates for sexual functioning and developed an effective psychosocial intervention integrating psychology and indigenous methods of yoga, mindfulness

meditation and relaxation. Considering the Indian milieu, this study is of much significance and has larger implications to address the typically unsaid sexual concerns of increasing numbers of cancer patients and their partners. This will also pave the way to further consider dimensions like “sexual” in the broader definition of health, thus adding to the holistic health perspective that needs to be contextualized to current times.

Dissemination Plan

Based on the findings of the study, the knowledge of the result will be disseminated through publications in the standard psychological journals; awareness programs to the target sample in hospitals and clinics; intellectual & academic sharing, and support from health teams targeting a holistic health perspective for care and cure of cancer.

Limitations and Future Direction

The findings recommend the need for applying such relevant psychosocial interventions as an integral part for holistic cancer care. The following points can be mentioned as the limitations of the present study, which can be considered for improvement in future research.

1. Although no scope to have a larger sample for this study, but the assessment of the effectiveness of intervention on a larger geographical area, on a wider perspective is suggested.

2. It is noticed in the present study that the patient’s sexual experience or sexual functioning aspect do not match with the spouse’s sexual experience/ functioning. The emotional interpretations of sexual experiences may be different, thus contributing to

the differences in the values of patient data and spousal data. So, the tools to capture the sexual functioning aspect in an implicit manner would be more appropriate.

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UNIVERSITY OF HYDERABAD

INSTITUTIONAL ETHICS COMMITTEE DECISION LETTER

EC / NEW / INST / 2023 / 3825

IEC No. **Application No:**	UH/IEC/2021/26	**Date of review**	06-12-2023
Project Title:	Psychosocial Correlates of Sexual Health among Cancer Patients and their Partners- Role of an Intervention		
Principal Investigator/ Co-PI:	PI: Dr. Bindu Menon CI: Prof. G. Padmaja		
Participating Institutes if any	----	Approval from Participating Institute	---
Documents received and reviewed	Protocol & ICF		
In case of renewal submission of update	----		
Decision of the IEC:	Approved Duration: One year from date of approval		
Any other Comments Requirements for conditional Approval	----		
Members Present	Dr. A.S. Sreedhar, Sri. A. Madhava Rao, Prof. B.R. Shamanna, Dr. M. Varalakshmi, Dr. Deepa Srinivas, and Dr. M.K. Aruanasree		

Please note:

a.Any amendments in the protocol must be informed to the Ethics committee and fresh approval taken.

b.Any serious adverse event must be reported to the Ethics Committee within 48 hours in writing (mentioning the protocol No. or the study ID)

c.Any advertisement placed in the newspapers, magazines must be submitted for approval.

d.If the conduct of the study is to be continued beyond the approved period, an application for the same must be forwarded to the Ethics Committee.

e.It is hereby confirmed that neither you nor any of the members of the study team participated in the decision making/voting procedures and declared conflict of interest.

A S Sreedhar 6/12/2023

Chairman

(Dr. A S Sreedhar)

6/12/2023

Member Secretary

(Prof. B.R. Shamanna)

for 6/12/2023

Convenor

(Dr. M. Varalakshmi)

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UNIVERSITY OF HYDERABAD

INSTITUTIONAL ETHICS COMMITTEE DECISION LETTER

IEC No. **Application No:**	UH/IEC/2021/26	**Date of review**	09-03-2021
Project Title:	Psychosocial correlates of sexual functioning among cancer patients and partners – Role of an intervention		
Principal Investigator/ Co-PI:	PI: Dr. Bindu Menon K. CI: Dr.GadirajuPadmaja		
Participating Institutes if any	----	**Approval from Participating Institute**	---
Documents received and reviewed	Application, proposal, consent form and CV submitted		
In case of renewal submission of update	----		
Decision of the IEC:	Approved Duration: One year from date of approval		
Any other Comments Requirements for conditional Approval	----		
Members Present	Dr. A.S.Sreedhar, Prof. B. R. Shamanna, Dr. M. Varalakshmi, Sri.A. Madhava Rao, Dr. M. Srinivas, Dr. Deepa Srinivas, Dr. M.K. Arunasree and Ms. A. D. Shobhavath		

INSTITUTIONAL ETHICS COMMITTEE
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LETTER OF APPROVAL

Date: 05-Oct-2022

To,
Dr. Bindu Menon K,
Doctoral Research Student,
Centre for Health Psychology,
University of Hyderabad,
Prof. C. R. Rao Road,
Gachibowli, Hyderabad-500046

Protocol Title: "Psychosocial correlates of Sexual Health among Cancer patients and their partners –Role of an Intervention"

Dear Dr. Bindu Menon K,

The Institutional Ethics Committee, MNJ Institute of Oncology & Regional Cancer Center, Hyderabad, reviewed and discussed the documents submitted by you regarding above mentioned protocol in its meeting held on 01-Oct-2022 at MNJ Institute of Oncology & Regional Cancer Center (In Auditorium room, 1st floor).

Principal Investigator for this Study: **Dr. Bindu Menon K,** Doctoral Research Student, Centre for Health Psychology, University of Hyderabad, Prof. C. R. Rao Road, Gachibowli, Hyderabad-500046

Dr.G. Padmaja (Co-PI): Head & Associate Professor, Centre for Health Psychology, University of Hyderabad, Prof, C. R. Rao, Gachibowli, Hyderabad-500046

The following documents were reviewed: (Submission Dated: 7-Sep-2022)

S. No.	Study Documents	Dated
01	Study Proposal	-
02	Cover Letter	-
03	Pre-test & Post-test questionnaires	-

The following members of the Ethics Committee were present at the meeting held on 01-Oct-2022, 11:45 AM at MNJ Institute of Oncology and Regional Cancer Center, Red Hills, Hyderabad-500004, Telangana, India.

Sl.No	Name	Qualification	Designation/Title	Affiliation as to the Institution Yes/No
1	Dr. Sham Sunder Gurnurkar	M.S, FRCS, DGO	Chairman	No
2	Dr. Muralidhar Muddusetty	M.S (General Surgery), DNB (Surgical Oncology)	Member Secretary	Yes
3	Dr. Ramesh Maturi	M.S, FRCS	Clinician	Yes
4	Mrs. Vimlabadruka	MA (Hindi Literature)	Social Scientist/ Social Worker	No
5	Smt. Lakshmi Sailaja Ammerineni	Diploma in Pharmacy	Member	Yes
6	Sri. Kotha Krishna Reddy	LLB	Advocate/ Legal Expert	No
7	Dr. Swetha Kasagani	M.D, Biochemistry	Basic Medical Scientist	Yes
8	Dr. Priya Kumari Dasari	M.Sc, Ph.D (Zoology)	Scientific Member	No
9	Mrs. Sowmya Bejagam	B.Tech (Information Technology	Lay Person	No
10	Dr. Naga Raj Kumari Chinthalapudi	M.D (Physiology)	Basic Medical Scientist	No

The Ethics Committee has unanimously approved the retrospective study to be conducted in its presented form.

Please Note:

a) Any amendments in the protocol must be informed to the Ethics Committee and fresh approval taken.

b) Any serious adverse event must be reported to the Ethics Committee within 24 hours in writing (mentioning the protocol no. or the study ID or study title).

c) Any advertisement placed in the newspapers, magazines, hospitals must be submitted for approval

d) The results of study should be presented in any of the academic forums of the hospital annually. Expectations of reporting study status should be presented to IRB/IEC annually & end of study.

e) This study approval letter is valid until end of study.

f) If the conduct of the study is to be continued beyond the approved period, an application for the same must be forwarded to the Ethics Committee.

g) Follow the COVID-19 safety precautions.

We hereby confirm that the Institutional Ethics Committee, MNJ Institute of Oncology and Regional Cancer Center, Hyderabad is organized and operates as per GCP, New Drugs and Clinical Trials Rules, 2019 of CDSCO (Central Drugs Standard Control Organization), ICMR (Indian Council of Medical Research, 2017) and applicable regulations.

Yours Sincerely,

(Dr. M. Muralidhar)
Member Secretary,
MNJIORCC Ethics Committee.
MNJIORCC

Secretary
Ethics Committee
MNJ Institute of Oncology &RCC
Red Hills, Hyderabad

INFORMED CONSENT FORM

Centre for Health Psychology
University of Hyderabad

What is this study about?

The present study is done in the process of measuring **"Psychosocial correlates of sexual functioning in cancer patients and partners – Role of an intervention"** We will ask you for some questions to examine psychological and social factors influencing sexual functioning . As a first step, we approach general socio-demographic details. Further, you will be asked to give answers/ rating on a few rating scales measuring the above mentioned study. You may be approached for about 2-4 sessions for a duration of 15-20 minutes each.

Why the patients participate?

The population of the cancer patients is increasing at a fast rate in India as well as worldwide, and they are a significantly large segment of any nation's population. Sexual concerns are prevalent in large growing population of young adult cancer patients & survivors. Having known the medical causes, it is important to examine the psychosocial correlates of sexual functioning in patients diagnosed with cancer along with their partner. To develop suitable psychological intervention targeted to reduce distress and improve sexual functioning are some of the important aspects of this study. Those who are willing to participate in intervention/ therapy, can continue by signing the informed consent.

Why we are approaching you?

As a part of this study we propose to collect the information of psychosocial correlates of sexual functioning in cancer patients. A few questions pertaining to psychological distress, illness perception, body image, relationship, quality of life, sexual functioning among cancer patients and partners are important .As a part of this, you are approached.

Is your participation a must throughout the study?

Please note that you are free to withdraw from the study at any point of time wished by you.

Confidentiality:

The information thus collected will be used exclusively for research purposes and the identity will be confidential.

Any potential risks?

There are no potential risks**.** Since this is a scale measuring psychosocial factors of sexual functioning in cancer, the statements in the scale are in the same direction. In case of any emotional distress felt, your investigator may choose to halt the session or you may withdraw from the study.. Any such emotional distress will be attempted to be addressed by the trained investigator. After the completion of the test, debriefing will be done. In case you have any doubts/ require clarity, please contact the investigator.

Name

Signature of the Participant

DEMOGRAPHIC DATA FORM

Participant Details

1.Name:

2.Age/Gender:

3.Marital status: Single / Married / Divorced / Others

4.Occupation:

5.Socio-economic Status: Upper SES / Middle SES / Lower SES

6.Religion:

7.Language spoken:

8.Place of living:

9.Category of Cancer :

10. Stage (as per medical records):

11.Life style Habits : Smoking / Alcohol / Recreational drugs / Any others.

12.Family Characteristics:

Relationship of Primary care giver : Spouse / Parents / Sibling / Children

Spouse details:

Name

Age

History of illness (if any)

Address for correspondence:

Phone/ Mobile No:

ECOG PERFORMANCE STATUS	
Grade	Statements
o	Fully active, able to carry on all pre-disease performance without restriction
I	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2	Ambulatory and capable Of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry on any selfcare. Totally confined to bed or
5	Dead

4DSQ

The following is a list of questions about various complaints and symptoms you may have. Each question refers to the complaints and symptoms that you had **in the past week (the past 7 days, including today)**. Complaints you had before then, but no longer had during the past week, do not count.
Please indicate for each complaint how often you noticed that you had it in the past week by putting an "X" in the box under the answer that is most appropriate.

	no	sometimes	regularly	often	very often or constantly
During <u>the past week</u>, did you suffer from:					
1. dizziness or feeling light-headed?					
2. painful muscles?					
3. fainting?					
4. neck pain?					
5. back pain?					
6. excessive sweating?					
7. palpitations?					
8. headache?					
9. a bloated feeling in the abdomen?					
10. blurred vision or spots in front of your eyes?					
11. shortness of breath?					
12. nausea or an upset stomach?					
During <u>the past week</u>, did you suffer from:					
13. pain in the abdomen or stomach area? - - - - - - - -					
14. tingling in the fingers? -					
15. pressure or a tight feeling in the chest? - - - - - - - -					
16. pain in the chest? -					
17. feeling down or depressed? - - - - - - - - - - - - - - - -					
18. sudden fright for no reason? - - - - - - - - - - - - - - - -					
19. worry? -					
20. disturbed sleep? -					
21. a vague feeling of fear? - - - - - - - - - - - - - - - - - -					
22. lack of energy? -					
23. trembling when with other people? - - - - - - - - - - -					
24. anxiety or panic attacks? - - - - - - - - - - - - - - - - -					
During <u>the past week</u>, did you feel:					
25. tense? -					
26. easily irritated? - - - - -- - - - - - - - - - - - - - - - - -					
27. frightened?- -					

	no	sometimes	regularly	often	very often or constantly

During <u>the past week</u>, did you feel:

28. that everything is meaningless? - - - - - - - - - - - - - -
29. that you just can't do anything anymore? - - - - - - -
30. that life is not worth while? - - - - - - - - - - - - - - - -
31. that you can no longer take any interest in the people and things around you? - - - - - - - - - - - - - -
32. that you can't cope anymore? - - - - - - - - - - - - - -
33. that you would be better off if you were dead? - - -
34. that you can't enjoy anything anymore? - - -- - - - -
35. that there is no escape from your situation? - - - - -
36. that you can't face it anymore? - - - - - - - - - - - -

During <u>the past week</u>, did you:

37. no longer feel like doing anything? - - - - - - - - - - -
38. have difficulty in thinking clearly? - - - - - - - - - - - -
39. have difficulty in getting to sleep? - - - - - - - - - - - -
40. have any fear of going out of the house alone? - - -

During <u>the past week:</u>

41. did you easily become emotional? - - - - - - - - - - -
42. were you afraid of anything when there was really no need for you to be afraid? - - - - - - - - - - - - - *(for instance animals, heights, small rooms)*
43. were you afraid to travel on buses, streetcars/ trams, subways or trains?
44. were you afraid of becoming embarrassed when with other people? -
45. did you ever feel as if you were being threatened by unknown danger? - - - - - - - - - - - - - - - - - - -
46. did you ever think "I wish I was dead"? - - - - - - - -
47. did you ever have fleeting images of any upsetting event(s) that you have experienced? - - - - - - - - -
48. did you ever have to do your best to put aside thoughts about any upsetting event(s)? - - - - - - - -
49. did you have to avoid certain places because they frightened you? -
50. did you have to repeat some actions a number of times before you could do something else? - - - - -

Dear Sir/ madam,

This is to collect information for the study. You will be asked how you feel about your appearance and about any changes that may have resulted from your disease or treatment. This will be confidential and your support in this is greatly acknowledged. Please read item carefully and circle on the answer which comes closest to the way you have been feeling about yourself, during the past week.

Name:

Age/ Gende

a).Not at all. b).A little c). Quite a bit d).Very much e) not applicable

1.Have you been feeling self conscious about your appearance? a / b / c / d / e

2.Have you felt less physically attractive as a result of your disease or treatment? a / b / c / d/ e

3.Have you been dissatisfied with your appearance when dressed? a / b / c / d / e

4Have you been feeling less feminine /masculine as result of your disease or treatment? a/ b/ c/d /e

5.Did you find it difficult to look at yourself undressed/ naked? a / b / c / d / e

6.Have you been feeling less sexually attractive as a result of your disease or treatment ? a /b /c/d/e

7. Did you avoid people because of the way you felt about your appearance? a / b / c /d / e

8.Have you been feeling the treatment has left your body less whole? a / b / c d/ e

9.Have you felt dissatisfied with your body? a / b / c / d/ e

10.Have you been dissatisfied with the appearance of your scar /marks? a / b / c / d/ e

11. How do you feel about the appearance ? Describe your feelings/ emotions.

a) Self -Perception of body image (Patient form)

b)Perception of partner about their body image (Partner of Patient form)

The Brief Illness Perception Questionnaire

For the following questions, please circle the number that best corresponds to your views:

How much does your illness affect your life?

0	1	2	3	4	5	6	7	8	9	10
no affect at all										severely affects my life

How long do you think your illness will continue?

0	1	2	3	4	5	6	7	8	9	10
a very short time										forever

How much control do you feel you have over your illness?

0	1	2	3	4	5	6	7	8	9	10
absolutely no control										extreme amount of control

How much do you think your treatment can help your illness?

0	1	2	3	4	5	6	7	8	9	10
not at all										extremely helpful

How much do you experience symptoms from your illness?

0	1	2	3	4	5	6	7	8	9	10
no symptoms at all										many severe symptoms

How concerned are you about your illness?

0	1	2	3	4	5	6	7	8	9	10
not at all concerned										extremely concerned

How well do you feel you understand your illness?

0	1	2	3	4	5	6	7	8	9	10
don't understand at all										understand very clearly

How much does your illness affect you emotionally? (e.g. does it make you angry, scared, upset or depressed?

0	1	2	3	4	5	6	7	8	9	10
not at all affected emotionally										extremely affected emotionally

Please list in rank-order the three most important factors that you believe caused <u>your illness</u>. *The most important causes for me:-*

1. _____

2. _____

3. _____

0 Strongly Disagree	1 Somewhat Disagree	2 Neutral	3 Somewhat Agree	4 Strongly Agree

1. My partner listens to me when I need someone to talk to.
2. We enjoy spending time with other couples.
3. I am satisfied with our sex life.
4. My partner helps me clarify my thoughts.
5. We enjoy the same recreational activities.
6. My partner has all of the qualities I've always wanted in a mate.
7. I can state my feelings without him/her getting defensive.
8. We usually "Keep to ourselves."
9. I feel our sexual activity is just routine.
10. When it comes to having a serious discussion, it seems we have little in common.
11. I share in few of my partner's interests.
12. There are times when I do not feel a great deal of love and affection for my partner.
13. I often feel distant from my partner.
14. We have few friends in common.
15. I am able to tell my partner when I want sexual intercourse.
16. I feel "put-down" in a serious conversation with my partner.
17. We like playing together.
18. Every new thing I have learned about my partner has pleased me.
19. My partner can really understand my hurts and joys.
20. Having time together with friends is an important part of our shared activities.

0 Strongly Disagree	1 Somewhat Disagree	2 Neutral	3 Somewhat Agree	4 Strongly Agree

21. I "hold back" my sexual interest because my partner makes me feel uncomfortable.
22. I feel it is useless to discuss some things with my partner.
23. We enjoy the out-of-doors together.
24. My partner and I understand each other completely.
25. I feel neglected at times by my partner.
26. Many of my partner's closest friends are also my closest friends.
27. Sexual expression is an essential part of our relationship.
28. My partner frequently tries to change my ideas.
29. We seldom find time to do fun things together.
30. I don't think anyone could possdibly be happier than my partner and I when we are with one another.
31. I sometimes feel lonely when we're together.
32. My partner disapproves of some of my friends.
33. My partner seems disintrested in sex.
34. We have an endless number of things to talk about.
35. I feel we share some of the same interests.
36. I have some needs that are not being met by my relationship.

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 ⑥ + ⑥ + ⑥ + ⑥ + ⑥ + ⑥ + ⑥	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ⑥ + ⑥ + ⑥ + ⑥ + ⑥ + ⑥	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 ⑥ + ⑥ + ⑥	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 ⑥ + ⑥ + ⑥ + ⑥ + ⑥ + ⑥ + ⑥ + ⑥	a. =	b:	c:

* See Procedures Manual, pages 13-15

Arizona Sexual Experiences Scale (ASEX)

For each item, please indicate your **OVERALL** level during the **PAST WEEK**, including **TODAY**.

1. How strong is your sex drive?

1	2	3	4	5	6
extremely strong	very strong	somewhat strong	somewhat weak	very weak	no sex drive

2. How are you sexually aroused (turned on)?

1	2	3	4	5	6
extremely easily	very easily	somewhat easily	somewhat difficult	very difficult	never aroused

FOR MALE ONLY

3. Can you easily get and keep an erection?

1	2	3	4	5	6
extremely easily	very easily	somewhat easily	somewhat difficult	very difficult	never

FOR FEMALE ONLY

3. How easily does your vagina become moist or wet during sex?

1	2	3	4	5	6
extremely easily	very easily	somewhat easily	somewhat difficult	very difficult	never

If you have had any sexual activity in the past week, please also answer the following two questions. If not, leave questions 4, and 5 blank.

No Sexual activity in past week ..... ☐

4. How easily can you reach an orgasm?

1	2	3	4	5	6
extremely easily	very easily	somewhat easily	somewhat difficult	very difficult	never reach orgasm

5. Are your orgasms satisfying?

1	2	3	4	5	6
extremely satisfying	very satisfying	somewhat satisfying	somewhat unsatisfying	very unsatisfying	can't reach orgasm

COMMENTS:

Semi-structured Interview

The following statements/questions explore some of your issues and concerns after being diagnosed with Cancer. Please feel free to express your thoughts, feelings and experiences with reference to each of the items.

1.What worries you the most after being diagnosed with cancer?

-Curability

-Ability to function normally

-Treatment side effects

-Any other, specify.

2.In what ways do you think Cancer has affected your role as a spouse/ partner?

3.What worries you the most in the relationship with your spouse/ partner?

-Not being attractive

-Cannot have intimacy/sex with your partner

-Your partner may lose interest in relationship

-Any other, specify.

4.What are the aspects in the communication with the spouse/partner which are affected with respect to-

Regular chores-

Family related discussion & child rearing-

Intimacy-

Financial matters-

Future plans-

5.What are the emotions you undergo with relation to your sexual relationship?

Fear of sex

Heavy discomfort/uneasiness during the sexual act

Negative thoughts and feelings

Any other, specify.

6. Are you sexually active, please mark Yes/No.

If Yes, what are the various problems you faced when you tried to have intercourse?

(Sexually active -Yes/No)

Pain

Dryness

No desire

Absence/Diminished orgasm

Any other

7.Are you informed about the treatments and how it may or may not affect sexual functioning?

8.Do you and your partner discuss sexual concerns and discuss with the doctor?

9. If not, how do you deal with the sexual problems?

10. Is there anything specific, that you would like to mention.

Cancer Information Scale for Couples with Cancer **(CISCC)**

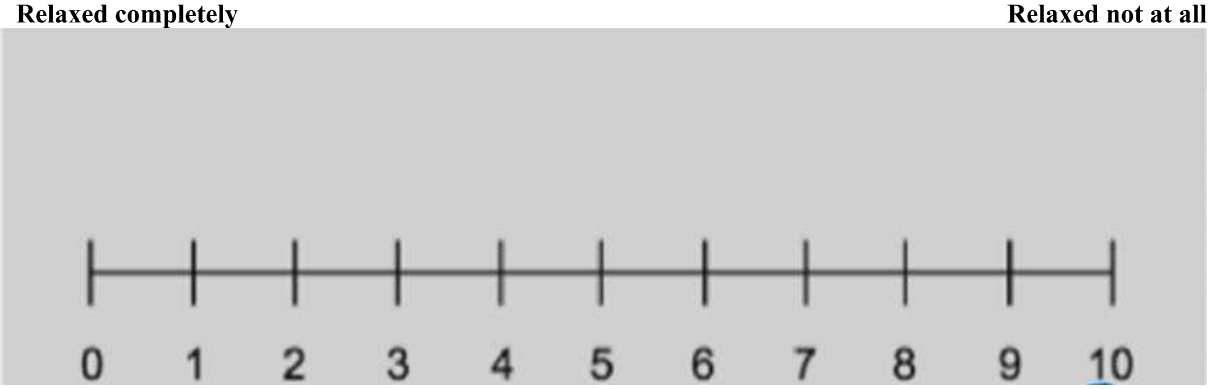
Given below are the statements that describe Cancer, and the personal concerns of Cancer patients and their partners. Please read them carefully and mark your answers as Yes or No.

1	There are treatments to cure Cancer	Yes / No
2	Cancer is contagious- it can spread to others by close contact	Yes / No
3	Kissing, hugging, and intimacy are prohibited for Cancer patients	Yes / No
4	Sharing a common washroom/ toilet with Cancer patients is not good for others	Yes / No
5	Chemotherapy may cause severe vomiting and loose motions	Yes / No
6	Radiation treatment may lead to permanent hair loss and skin damage	Yes / No
7	Only Surgery can remove cancer from the body	Yes / No
8	Cancer patients can return to work after the treatment	Yes / No
9	Cancer patients can participate in public gatherings, functions, and leisure activities	Yes / No
10	Cancer patients can have intimacy with their partners and resume normal sexual life after the prescribed course of treatment	Yes / No

VISUAL ANALOGUE SCALE (VAS)
(To measure the state of relaxation)

INSTRUCTIONS: Kindly place a mark on a 0 – 10 scale to indicate to what extent you were relaxed - from relaxed not at all to relax completely.

Relaxed completely **Relaxed not at all**



సమాచారాంతర సమ్మతి పత్రం

సెంటర్ ఫర్ హెల్త్ సైకాలజీ

యూనివర్శిటీ ఆఫ్ హైదరాబాద్

ఈ అధ్యయనం దేని గురించి?

ప్రస్తుత అధ్యయనం "క్యాన్సర్ రోగులు మరియు భాగస్వాములలో లైంగిక ఆరోగ్యం యొక్క మానసిక సామాజిక సంబంధాలు - జోక్యం యొక్క పాత్ర" **ను కొలిచే ప్రక్రియలో చేయబడింది,** లైంగిక ఆరోగ్యాన్ని ప్రభావితం చేసే మానసిక మరియు సామాజిక కారకాలను పరిశీలించడానికి మేము మిమ్మల్ని కొన్ని ప్రశ్నలు అడుగుతాము. మొదటి దశగా, మేము సాధారణ సామాజిక-జనాభా వివరాలను పరిశీలిస్తాము. ఇంకా, పైన పేర్కొన్న అధ్యయనాన్ని కొలిచే కొన్ని రేటింగ్ స్కేల్స్ పై సమాధానాలు/రేటింగ్ ఇవ్వమని మిమ్మల్ని అడుగుతారు. 15-20 నిమిషాల వ్యవధితో సుమారు 2-4 సెషన్ల కోసం మిమ్మల్ని సంప్రదించవచ్చు.

రోగులు ఎందుకు పాల్గొంటారు?

క్యాన్సర్ రోగుల జనాభా భారతదేశంతో పాటు ప్రపంచవ్యాప్తంగా వేగంగా పెరుగుతోంది మరియు వారు ఏ దేశ జనాభాలోనైనా గణనీయంగా పెద్ద విభాగం. యువ వయోజన క్యాన్సర్ రోగులు మరియు ప్రాణాలతో బయటపడిన పెద్ద జనాభాలో లైంగిక ఆందోళనలు ప్రబలంగా ఉన్నాయి. వైద్య కారణాలను తెలుసుకున్న తరువాత, వారి భాగస్వామితో పాటు క్యాన్సర్ నిర్ధారణ అయిన రోగులలో లైంగిక పనితీరు యొక్క మానసిక సామాజిక సంబంధాలను పరిశీలించడం చాలా ముఖ్యం. బాధను తగ్గించడానికి మరియు లైంగిక పనితీరును మెరుగుపరచడానికి ఉద్దేశించిన తగిన మానసిక జోక్యాన్ని అభివృద్ధి చేయడం ఈ అధ్యయనం యొక్క కొన్ని ముఖ్యమైన అంశాలు. జోక్యం/థెరపీలో పాల్గొనడానికి సిద్ధంగా ఉన్నవారు, సమాచారాంతర సమ్మతిపై సంతకం చేయడం ద్వారా కొనసాగించవచ్చు.

మేము మీ వద్దకు ఎందుకు వస్తున్నాము?

ఈ అధ్యయనంలో భాగంగా, క్యాన్సర్ రోగులలో లైంగిక ఆరోగ్యం యొక్క మానసిక సామాజిక సంబంధాల సమాచారాన్ని సేకరించాలని మేము ప్రతిపాదిస్తున్నాము. మానసిక క్షోభ, అనారోగ్య భావన, శరీర ఇమేజ్, సంబంధం, జీవన నాణ్యత, క్యాన్సర్ రోగులు మరియు భాగస్వాముల మధ్య లైంగిక ఆరోగ్యానికి సంబంధించిన కొన్ని ప్రశ్నలు ముఖ్యమైనవి .ఇందులో భాగంగా మిమ్మల్ని సంప్రదిస్తున్నారు. ఈ కొలతలను మెరుగుపరచడానికి దృష్టి సారించిన చికిత్స / జోక్యంలో మీరు పాల్గొనవచ్చు.

అధ్యయనం అంతటా మీరు పాల్గొనడం తప్పనిసరినా?

మీరు కోరుకున్న ఏ సమయంలోనైనా అధ్యయనం నుంచి వైదొలగడానికి మీకు స్వేచ్ఛ ఉందని దయచేసి గమనించండి.

2015-201

ఈ విధంగా సేకరించిన సమాచారం పరిశోధన ప్రయోజనాల కొరకు ప్రత్యేకంగా ఉపయోగించబడుతుంది మరియు గుర్తింపు గోప్యంగా ఉంచబడుతుంది.

ఏదైనా సంభావ్య ప్రమాదాలు ఉన్నాయా?

డెమోగ్రాఫిక్ డేటా ఫారం

పాల్గొనువారు వివరాలు :

1. పేరు :

2. వయస్సు లింగం :

3. వైవాహిక స్థితి : ఒంటరి / వివాహిత / విడాకులు తీసుకున్నారు

4. వృత్తి. :

5. సామాజిక ఆర్థిక స్థితి : ఎగువ తరగతి / మధ్యతరగతి /దిగువ తరగతి,

6. మతం :

7. మాతృభాష :

8. నివసించే ప్రదేశం :

9. క్యాన్సర్ కేటగిరీ :

10. దశ (వైద్య రికార్డుల ప్రకారం):

11. జీవన శైలి అలవాట్లు : ధూమపానం/మద్యం / Recreationd drugs/ ఏవైనా ఇతర

12. కుటుంబ లక్షణాలు :

ప్రాథమిక సంరక్షణ ఇచ్చు వారితో సంబంధం :

జీవిత భాగస్వామి/తల్లిదండ్రులు / తోబుట్టువులు/ సంతానం.

13. జీవిత భాగస్వామి వివరాలు:

పేరు :

వయస్సు :

అనారోగ్య చరిత్ర (ఏదైనా ఉంటే)

ఫోన్ :

సంప్రదించు చిరునామా :

సంభావ్య ప్రమాదాలు లేవు. ఇది క్యాన్సర్లో లైంగిక ఆరోగ్యం యొక్క మానసిక సామాజిక కారకాలను కొలిచే స్కేల్ కాబట్టి, స్కేల్లోని ప్రకటనలు అదే దిశలో ఉంటాయి. ఏదైనా మానసిక క్షోభ అనుభవించినట్లయితే, మీ పరిశోధకుడు సెషన్ ను నిలిపివేయాలని ఎంచుకోవచ్చు లేదా మీరు అధ్యయనం నుంచి వైదొలగవచ్చు. అటువంటి ఏవైనా భావోద్వేగ క్షోభను శిక్షణ పొందిన పరిశోధకుడు పరిష్కరించడానికి ప్రయత్నిస్తాడు. పరీక్ష పూర్తయిన తర్వాత డీబ్రిఫింగ్ చేస్తారు. ఒకవేళ మీకు ఏవైనా సందేహాలు ఉన్నట్లయితే/స్పష్టత అవసరం అయితే, దయచేసి పరిశోధకుడిని సంప్రదించండి.

Patient_____ పేరు[మార్చు]

జీవితభాగస్వామి పేరు _____

కాంటాక్ట్ సమాచారం

పరిశోధకుడు: డాక్టర్ బిందు మీనన్ కె.

ఫోన్: 9490670090

పాల్గొనేవారి యొక్క పరిశోధకుడి సంతకం

ECOG పనితీరు స్థితి	
దశ	**ప్రకటనలు**
0	పూర్తిగా చురుకుగా ఉంటుంది , పరిమితులు లేకుండా వ్యాధి పూర్వక పనితీరును కొనసాగించడం
1	శారీరక శ్రమ తో కూడిన పనులు పరిమితంగా అవటం , కానీ తేలిక పనులు చేయగలగడం . ఉదా:తేలికైన ఇంటి పనులు , ఆఫీస్ పనులు
2	నడవగలగటం మరియు స్వీయ సంరక్షణ పనులు చేయగలగడం కానీ ఏ కార్యకలాపాల్ని నిర్వహించలేకపోవడం మేల్కొన్న సమయం లో50% కంటే ఎక్కువగా చురుకుగా ఉండటం
3	నడవగలగటం మరియు స్వీయ సంరక్షణ పనులు చేయగలగడం కానీ ఏ కార్యకలాపాల్ని నిర్వహించలేకపోవడం మేల్కొన్న సమయం లో 50%కంటే ఎక్కువగా చురుకుగా ఉండటం
4	పూర్తిగా వికలాంగులు అవటం . ఎలాంటి స్వీయ సంరక్షణ కొనసాగించలేరు . పూర్తిగా మంచానికి లేదా కుర్చీ కి పరిమితం అవడం
65	చనిపోవడం

నాలుగు డైమెన్షనల్ సింప్టమ్ ప్రశ్నావళి

క్రింది ప్రశ్నలు మీకు ఉన్న వ్యాధి లక్షణాల గురించి (మీకు ఒకవేళ ఏమైనా ఉంటె).

ప్రతి ప్రశ్న గత వారంలో మీరు కలిగి ఉన్న ఫిర్యాదులు మరియు లక్షణాలను సూచిస్తుంది.

మీకు ఇంతకు ముందు ఉన్న ఫిర్యాదులు కానీ , గత వారంలో లేనివి కానీ , లెక్కించవద్దు.

గత వారం లో మీరు ఎంత తరచుగా క్రింది లక్షణాలను కలిగి ఉన్నారు అన్న విషయాన్ని గమనించి దాని సమాధానంగా "X"ని మార్క్ చెయ్యండి.

	క్రమం				
	లేదు	**కొన్నిసార్లు**	**తప్పకుండా**	**తరచుగా**	**నిరంతరం**
1. తల తిరగడం	☐	☐	☐	☐	☐
2. బాధాకరమైన నొప్పులు	☐	☐	☐	☐	☐
3. చెక్కర వచ్చి పడిపోవడం	☐	☐	☐	☐	☐
4. మెడ నొప్పి	☐	☐	☐	☐	☐
5. వెన్ను నొప్పి	☐	☐	☐	☐	☐
6. ఎక్కువగా చెమట రావడం	☐	☐	☐	☐	☐
7. దడ దడ	☐	☐	☐	☐	☐
8. తల నొప్పి	☐	☐	☐	☐	☐
9 . కడుపు లో ఉబ్బినట్టు అనిపించడం.	☐	☐	☐	☐	☐
10. అస్పష్టమైన ద్రుష్టి	☐	☐	☐	☐	☐
11. శ్వాస ఆడకపోవడం	☐	☐	☐	☐	☐
12. కడుపులో నొప్పి	☐	☐	☐	☐	☐
13. వికారం లేదా వాంతి వచ్చినట్టు అనిపించడం	☐	☐	☐	☐	☐
14 వేళ్ళలో తిమ్మిరి రావడం	☐	☐	☐	☐	☐
15. ఛాతిలో నొప్పి	☐	☐	☐	☐	☐
16. తల తిరగడం	☐	☐	☐	☐	☐

నాలుగు డైమెన్షనల్ సింప్టమ్ ప్రశ్నావళి

17. నిరాశగా ☐ ☐ ☐ ☐ ☐
అనిపించడం.

18. కారణం లేకుండా
భయం.

19. ఆందోళన ☐ ☐ ☐ ☐ ☐

20. సరిగ్గా నిద్ర పట్టకపోవడం ☐ ☐ ☐ ☐ ☐

21. ఏదో తెలియని ☐ ☐ ☐ ☐ ☐
భయం

22. శక్తి లేకపోవడం ☐ ☐ ☐ ☐ ☐

23 ఇతర వ్యక్తులు ☐ ☐ ☐ ☐ ☐
ఉన్నప్పుడు వణకడం

24. ఆందోళన ☐ ☐ ☐ ☐ ☐

గత వారం నుండి మీకు ఎలా అనిపిస్తుంది

25 . ఒత్తిడి ☐ ☐ ☐ ☐ ☐

26 చిరాకు పడటం ☐ ☐ ☐ ☐ ☐

27. భయపడటం ☐ ☐ ☐ ☐ ☐

28. ప్రతి దానికి ☐ ☐ ☐ ☐ ☐
అర్థం లేకపోవడం

29. మీరు ఇకపై ☐ ☐ ☐ ☐ ☐
ఏమి చెయ్యలేరు

30. జీవితానికి విలువ ☐ ☐ ☐ ☐ ☐
లేదు అని అనిపించడం

31. మీరు ఇకపై మీ చుట్టూ ఉన్న వ్యక్తులు మరియు విషయాల పై ఆసక్తి చూపలేరు:
☐ ☐ ☐ ☐ ☐

32. మీరు ఇకపై ☐ ☐ ☐ ☐ ☐
భరించలేరు అని

33. నువ్వు చనిపోతే ☐ ☐ ☐ ☐ ☐

నాలుగు డైమెన్షనల్ సింప్టమ్ ప్రశ్నావళి

బాగుండేది అని

34. మీరు ఇకపై దేనిని☐ ☐ ☐ ☐ ☐

ఎంజాయ్ చేయలేరు అని అనిపియ్యడం

35. మీ పరిస్థితి నుండి తప్పించుకునే అవకాశం లేదు అని అనిపించడం

☐ ☐ ☐ ☐ ☐

36. మీరు ఇకపై ఎదురుకోలేరు అని అనిపియ్యడం

☐ ☐ ☐ ☐ ☐

37. ఏమి చెయ్యాలి ☐ ☐ ☐ ☐ ☐

అని అనిపించదు.

38. స్పష్టంగా ఆలోచించడం కష్టంగ అనిపించడం:

☐ ☐ ☐ ☐ ☐

39. నిద్ర పోవడానికి ఇబ్బంది పడుతున్నారా :

☐ ☐ ☐ ☐ ☐

40. ఒంటరిగా ఇంటి నుండి బయటకి వెళ్లాలంటే భయపడ్తారా?

☐ ☐ ☐ ☐ ☐

గత వారం లో:

42 . మీరు సులభంగా భావోద్వేగానికి గురయ్యారా?

☐ ☐ ☐ ☐ ☐

42 . మీరు దేనికైనా భయపడుతున్నారా?:

☐ ☐ ☐ ☐ ☐

43. మీరు బస్సు మరియు ట్రైన్ లో ప్రయాణించడానికి భయపడుతున్నారా?:

☐ ☐ ☐ ☐ ☐

44.మీరు వేరే వాళ్ళు ఉన్నప్పుడు ఇబ్బంది పడతారా?:

☐ ☐ ☐ ☐ ☐

45. మీరు తెలియని ప్రమాదం లో ఉన్నారని మీకు ఎప్పుడైనా అనిపించిందా?:

☐ ☐ ☐ ☐ ☐

46. నేను చనిపోతే బాగుండు అని ఎప్పుడైనా అనిపించిందా?

☐ ☐ ☐ ☐ ☐

నాలుగు డైమెన్షనల్ సింప్టమ్ ప్రశ్నావళి

47. మీరు అనుభవించిన ఏదైనా కలత కలిగించే సంఘటన యొక్క నశ్వరమైన చిత్రాలను మీరు ఎప్పుడైనా కలిగి ఉన్నారా?:

☒ ☐ ☐ ☐ ☐

48. ఏదైనా కలత కలిగించే సంఘటనల గురించి ఆలోచనలను పక్కన పెట్టడానికి మీరు మీరు చాల కష్టపడాల్సి ఒచ్చిందా?

☐ ☐ ☐ ☐ ☐.

49. కొన్ని ప్రదేశాలని చూసి మీరు భయపడాల్సి వస్తుందా?

☐ ☐ ☐ ☐ ☐.

50. మీరు వేరే ఏదైనా చేయడానికి ముందు మీరు కొన్ని చర్యలను అనేక సార్లు పునరావృతం చెయ్యాల్సి ఒస్తుందా?

☐ ☐ ☐ ☐ ☐.

ప్రియమైన సర్/ మేడమ్,

ఇది అధ్యయనం కోసం సమాచారం సేకరించడం. మీ రూపం గురించి మరియు మీ అనారోగ్యం వల్ల కాని, చికిత్స వల్ల కాని మీలో వచ్చిన మార్పుల గురించి ప్రశ్నలు అడగబడతారు. ఇది గోప్యంగా ఉంటుంది మరియు ఇందులో మీ మద్దతు గొప్పగా గుర్తించబడుతుంది. దయచేసి అంశాలను జాగ్రత్తగా చదవండి మరియు గత వారంలో మీ గురించి మీరు భావించిన విధానానికి దగ్గరగా ఉన్న సమాధానాన్ని గుర్తించి సున్నా చుట్టండి.

పేరు:

వయసు | లింగం

(a) అస్సలు కాదు (b) కొద్దిగా (c) కొంచెం (d) చాలా (e) వర్తించదు

1) మీ రూపమును గురించి మీరు స్వీయ స్పృహతో ఉన్నారా?

a b c d e

2). మీ వ్యాధి లేదా చికిత్స ఫలితంగా మీరు తక్కువ శారీరిక ఆకర్షణగా ఉన్నారని భావించారా?

a b c d e

3) మీరు దుస్తులు ధరించినపుడు మీ రూపం పట్ల అసంతృప్తిగా ఉన్నారా?

a b c d e

4)మీ వ్యాధి లేదా చికిత్స వల్ల మీరు స్త్రీ పురుషత్వం తక్కువగా ఉన్నట్లు భావిస్తున్నారా?

a b c d e

5) వస్త్రం లేకుండా నగ్నంగా మిమ్మలని చూసుకోవడం కష్టం అనిపించిందా?

a b c d e

6)మీ వ్యాధి లేదా చికిత్స వల్ల మీరు లైంగిక ఆకర్షణ తక్కువ కలిగి ఉన్నారని భావిస్తున్నారా?

a b c d e

7) మీ రూపం గురించి మీరు భావించిన తీరు కారణంగా వ్యక్తులను తప్పించుకున్నారా?

a b c d e

8)have you been feeling the treatment has left your body less whole?

a b c d e

9)మీరు మీ శరీరం పట్ల అసంతృప్తిగా ఉన్నారా?

a b c d e

10) మీ మచ్చలు / గుర్తులు కనిపించడం పట్ల మీరు అసంతృప్తిగా ఉన్నారా?

a b c d e

సంక్షిప్త అనారోగ్య అవగాహన ప్రశ్నావళి

క్రింది ప్రశ్నలకు మీ అభిప్రాయాలకు సరిపోయే నంబరుకు సున్న చుట్టండి

మీ అనారోగ్యం మీ జీవితంను ఎంత ప్రభావితం చేస్తుంది?

1 2 3 4 5 6 7 8 9 10

అసలు ప్రభావితం లేదు అత్యధికంగా ప్రభావితం చేస్తుంది

మీ అనారోగ్యం ఎంతకాలం కొనసాగుతుందని మీరు అనుకుంటున్నారు

1 2 3 4 5 6 7 8 9 10

చాలా తక్కువసమయం ఎప్పటికీ

మీ అనార్యగం పై మీకు ఎంతవరకు నియంత్రణ ఉందని మీరు భావిస్తున్నారు?

1 2 3 4 5 6 7 8 9 10

అస్సలు నియంత్రణ లేదు. పూర్తి నియంత్రణ

మీ చికిత్స మీ అనారోగ్యమునకు ఎంతవరకు సహాయపడుతుంది అని మీరు అనుకుంటున్నారు?

1 2 3 4 5 6 7 8 9 10

అస్సలు కుదరదు చాలాసహాయకరంగా ఉంది.

మీ అనారోగ్యం నుండి మీరు ఎంతవరకు లక్షణాలను అనుభవిస్తున్నారు?

1 2 3 4 5 6 7 8 9 10

ఎటువంటి లక్షణాలు లేవు. అనేక తీవ్రమైన లక్షణాలు

- మీ అనారోగ్యము గురించి మీరు ఎంత ఆందోళన చెందుతున్నారు?

1 2 3 4 5 6 7 8 9 10

అస్సలు ఆందోళన లేదు. చాలా ఆందోళన ఉంది

మీ అనారోగ్యమును మీరు ఎంతబాగా అర్థం చేసుకున్నారు అని మీరు భావిస్తున్నారు?

1 2 3 4 5 6 7 8 9 10

అస్సలు అర్థం కాలేదు

పూర్తిగా అర్థం అయింది

- మీ అనార్యోము మిమ్మలను మానసికంగా ఎంత ప్రభావితం. చేస్తుంది

1 2 3 4 5 6 7 8 9 10

మానసికంగా అస్సలు ప్రభావితంగా లేదు

మానసికంగా చాలా ప్రభావితంగా ఉంది

దయచేసి మీ అనారోగ్యమునకు మూడు ముఖ్యమైన కారణాల జాబితా చేయండి .

నాకు అత్యంత ముఖ్యమైన కారణాలు:

1

2

3

రిలేషన్ షిప్ ఇన్వెంటరీలో సాన్నిహిత్యం యొక్క వ్యక్తిగత మదింపు

సూచనలు: దయచేసి ప్రస్తుత సంబంధం గురించి మీకు ఎలా అనిపిస్తుందో దాని ప్రకారం మీ ప్రతిస్పందనను సర్కిల్ చేయండి.

ఫలితాలు కోసం అన్ని ప్రశ్నలకు సమాధానం కావాలి.

గట్టిగా తిరస్కరించడము **కొంత మేర అంగీకరించలేదు** **తటస్థ**

(1) **(2)** **(3)**

కొంతవరకుఅంగీకరిస్తున్నాను **గట్టిగా అంగీకరిస్తున్నాను**

(4) **(6)**

1 2 3 4 5 **1**.నేను మాట్లడానికి ఏదైన అవసరమయి నపుడు నా భాగస్వామి నా మాట వింటారు

1 2 3 4 5 **2**. మేము ఇతర జంటలతో గడపడం ఆనందించాము

1 2 3 4 5 **3.** మా లైంగిక జీవితంతో నేను సంతృప్త చెందాను

1 2 3 4 5 **4**. నా ఆలోచనలు స్పష్టం చేయడానికి నా భాగస్వామి నాకు సహాయపడుతుంది.

1 2 3 4 5 **5**. మేము అదే కార్య క్రమాలను ఆనందిస్తాము

1 2 3 4 5 **6**. నా భాగస్వామికి నేను ఎప్పుడు కోరుకునే అన్ని లక్షణాలు ఉన్నాయి.

1 2 3 4 5 **7.** అతను / ఆమె రక్షణ పొందకుండా నేను నా భావాలను చెప్పగలను.

1 2 3 4 5 **8.** మేము సాధారణంగా " మన వద్దే ఉంచుకుంటాము "

1 2 3 4 5 **9**. మా లైంగిక కార్యకలాపాలు కేవలం సాధారణమైనవి అని నేను భావిస్తున్నాను.

1 2 3 4 5 **10.**తీవ్రమైన చర్చ విషయానికి వస్తే మనకు ఉమ్మడిగా చాలా తక్కువగా ఉన్నట్లు అనిపిస్తుంది.

1 2 3 4 5 **11.** నా భాగస్వామి యొక్క కొన్ని ఆసక్తుల ను నేను పంచుకుంటాను.

1 2 3 4 5 **12.** నా భాగస్వామి పట్ల నాకు చాల ప్రేమ మరియు ఆప్యాయత కనిపించని సందర్భాలు ఉన్నాయి

1 2 3 4 5 **13.** నేను తరచుగ నా భాగస్వామి నుంచి దూరం దూరం అనిపిస్తుంది

1 2 3 4 5 **14.** మాకు ఉమ్మడిగా కొద్దీ మంది స్నేహితులు ఉన్నారు.

1 2 3 4 5 **15.** నేను లైంగిక సంపర్కం కావలి అనుకున్నపుడు నా భాగస్వామికి చెప్పగలుగుతున్నాను.

1 2 3 4 5 **16.** నాతో తీవ్రమైన సంభాషణల్లోనేను అణచివేయబడుతున్నాను.

1 2 3 4 5 **17.** మేము ఒకరికి ఒకరు అనుకోవడం సంతోషిస్తాము.

1 2 3 4 5 **18.** నా భాగస్వామి గురించి నేను నేర్చుకున్న ప్రతి కొత్త విషయం నాకు సంతోషాన్నికలిగిస్తుంది.

1 2 3 4 5 **19.** నా భాగస్వామి నా బాధలు మరియు ఆనందాలు నిజంగా అర్థంచేసుకోవచ్చు.

1 2 3 4 5 **20.** మా కార్య కలాపాలలో స్నేహితులతో కలసి సమయం గడపటం ఒక ముఖ్యమైన భాగం.

1 2 3 4 5 **21.** నా భాగస్వామి అసౌకర్యంగా వున్నపుడు నా లైంగిక కొరిక , ఆసక్తిని నేను వెనక్కు తీసుకొంటాను,

1 2 3 4 5 **22.** నా భాగస్వామితో కొన్ని విషయాలు చర్చించడం పనికిరాదని నేను భావిస్తున్నాను.

1 2 3 4 5 **23.** మేము కలసి తలుపులు ఆనందిస్తాము**.**

1 2 3 4 5 **24.**నా భాగస్వామి మరియు నేను,ఒకరినొకరు పూర్తిగా అర్థంచేసుకున్నాము.

1 2 3 4 5 **25.**భాగస్వామి ద్వారా నేను కొన్నిసార్లు నిర్లక్ష్యం చేసినట్లు భావిస్తున్నాను.

1 2 3 4 5 **26.** నా భాగస్వామికి అత్యంత సన్నిహిత మిత్రులు కూడా నా సన్నిహిత మిత్రులే

1 2 3 4 5 **27.** లైంగిక వ్యక్తీకరణ మనలో ముఖ్యమైన సంబంధం.

1 2 3 4 5 **28.**నా భాగస్మామి తరచుగా నా ఆలోచనలు మార్చడానికి ప్రయాతిస్తాడు.

1 2 3 4 5 **29**. కలసి పనులు చేయడానికి మేము చాలా అరుదుగా సమయం కనుగొంటాము.

1 2 3 4 5 **30**. మేము ఒకరికొకరు కలసి ఉన్నప్పుడు. మా కంటే ఎవరు సంతోషంగా ఉన్నారని నేను అనుకోను.

1 2 3 4 5 **31**. మేము కలసి ఉన్నా కుడా కొన్ని సార్లు ఒంటరిగా ఉన్నట్లు భావిస్తాను.

1 2 3 4 5 **32** నా భాగస్వామి నా స్నేహితులను అంగీకరించలేదు.

1 2 3 4 5 **33** నా భాగస్వామి సెక్స్ పట్ల ఆసక్తి చూపలేదు.

1 2 3 4 5 **34**. మాకు మాట్లడానికి అంతులేనిసంఖ్యలో మాకు విషయాలు ఉన్నాయి.

1 2 3 4 5 **35.**మాకు ఒకేరకంగా వున్నా ఆసక్తులను పంచుకుంటామనినేనుభావిస్తున్న.

1 2 3 4 5 **36.** నా యొక్క అవసరాలు మాసంబంధం తీర్చలేదు అనుకుంటున్నాను.

WHOQOL-BREF

కింది ప్రశ్న లు మీ జీవన నాణ్య త, ఆరోగ్యం లేదా మీ జీవితంలోని ఇతర రంగాల గురించి మీకు ఎలా అనిపిస్తుందో అడుగుతుంది. నేను ప్రతి ప్రశ్న ను మీకు చదువుతాను, ప్రతిస్పందన ఎంపికలతో పాటు దయచేసి అత్యంత సముచితంగా కనిపించే సమాధానాన్ని ఎంచుకోండి. ఒక ప్రశ్న కు ఏ ప్రతిస్పందన ఇవ్వా లో మీకు ఖచ్చి తంగా తెలియకుంటే, మీరు ఆలోచించే మొదటి ప్రతిస్పందన తరచుగా ఉత్తమమైనది

దయచేసి మీ ప్రమాణాలు, ఆశలు, ఆనందాలు మరియు ఆందోళనలను గుర్తుంచుకోండి. గత నాలుగు వారాలలో మీ జీవితం గురించి మేము మిమ్మ ల్ని అడుగుతున్నా ము. అనుకుంటాను

		చాలా పేద	**పేద**	పేదవాడు కాదు, మంచివాడు కాదు	బాగుంది	చాలా బాగుంది
1.	మీరు మీ గురించి ఎలా రేట్ చేస్తారు జీవితపు నాణ్య త?	1	2	3	4	5

		చాలా అసంతృప్తి	అసంతృప్తి	సంతృప్తిగానీ, అసంతృప్తిగానీ లేదు	సంతృప్తి చెందారు	చాలా సంతృప్తిగా ఉంది
2.	మీ ఆరోగ్యంతో మీరు ఎంత సంతృప్తిగా ఉన్నా రు?	1	2	3	4	5

గత నాలుగు వారాల్లో మీరు కొన్ని విషయాలను ఎంతవరకు అనుభవించారు అనే దాని గురించి క్రింది ప్రశ్న లు అడుగుతాయి.

		అస్స లు కుదరదు	కొంచెం	ఒక మోస్తరు మొత్తం	చాలా ఎక్కు వ	విపరీతమైన మొత్తం
3	శారీరక నొప్పి మిమ్మ ల్ని ఏ మేరకు నిరోధిస్తుందని మీరు భావిస్తున్నా రు మీరు చేయవలసింది చేస్తున్నా రా?	5	4	3	2	1
4	మీ రోజువారీ జీవితంలో	5	4	3	2	1

	పనిచేయడానికి మీకు ఏదైనా వైద్య చికిత్స ఎంత అవసరం?					
5	మీరు జీవితాన్ని ఎంత ఆనందిస్తున్నారు?	1	2	3	4	5
6	మీ జీవితం ఎంత వరకు అర్థవంతంగా ఉండాలి?	1	2	3	4	5

		అస్స లు కుదరదు	కొంచెం	ఒక మోస్తరు మొత్తం	చాలా ఎక్కు వ	అత్యంత
7	మీరు ఎంత బాగా ఏకాగ్రత పెట్టగలుగుతున్నారు	1	2	3	4	5
8	మీ రోజువారీ జీవితంలో మీరు ఎంత సురక్షితంగా ఉన్నా రు?	1	2	3	4	5
9	మీ శారీరక ఆరోగ్యం ఎంత పర్యా వరణం?	1	2	3	4	5

ఈ క్రింది ప్రశ్న లు మీరు గత నాలుగు వారాల్లో కొన్ని విషయాలను ఎంత పూర్తిగా అనుభవించారు లేదా చేయగలిగారు అనే దాని గురించి అడుగుతారు.

		అస్స లు కుదరదు	కొంచెం	మధ్య స్తంగా	ఎక్కు వగా	పూర్తిగా
10	మీరు రోజువారీ జీవితంలో తగినంత శక్తి కలిగి ఉన్నా రా?	1	2	3	4	5
11	మీరు మీ శరీర రూపాన్ని అంగీకరించగలరా?	1	2	3	4	5
12	మీ అవసరాలకు సరిపడా డబ్బు ఉందా?	1	2	3	4	5

13	మీ రోజువారీ జీవితంలో మీకు అవసరమైన సమాచారం మీకు ఎంతవరకు అందుబాటులో ఉంది	1	2	3	4	5
14	విశ్రాంతి కార్యకలాపాలకు మీకు ఎంతవరకు అవకాశం ఉంది?	1	2	3	4	5

		చాలా పేద	పేద	పేదవాడు కాదు, మంచివాడు కాదు	మంచిది	చాలా బాగుంది
15	మీరు ఎంత బాగా పొందగలుగుతున్నారు చుట్టూ?	1	2	3	4	5

		చాలా అసంతృప్తి	అసంతృప్తి	తృప్తిగానీ, అసంతృప్తిగానీ లేదు	సంతృప్తి చెందారు	చాలా సంతృప్తిగా ఉంది
16	మీతో మీరు ఎంత సంతృప్తి చెందారు నిద్ర?	1	2	3	4	5
17	మీ రోజువారీ కార్యకలాపాలను నిర్వహించగల మీ సామర్థ్యంతో మీరు ఎంత సంతృప్తి చెందారు?	1	2	3	4	5
18	మీ పని సామర్థ్యంతో మీరు ఎంత సంతృప్తి చెందారు?	1	2	3	4	5
19	మీరు ఎంత సంతృప్తి చెందారు మీరే?	1	2	3	4	5

20	మీ వ్య క్తిగత సంబంధాలతో మీరు ఎంత సంతృప్తి చెందారు?	1	2	3	4	5
21	మీ లైంగిక జీవితంతో మీరు ఎంత సంతృప్తిగా ఉన్నా రు?	1	2	3	4	5
22	మీ స్నే హితుల నుండి మీకు లభించే మద్దతుతో మీరు ఎంత సంతృప్తి చెందారు?	1	2	3	4	5
23	మీ నివాస స్థలం యొక్క పరిస్థితులతో మీరు ఎంతవరకు సంతృప్తి చెందారు?	1	2	3	4	5
24	ఆరోగ్య సేవలకు ప్రాప్యతతో మీరు ఎంత సంతృప్తి చెందారు?	1	2	3	4	5
25	మీ రవాణాతో మీరు ఎంత సంతృప్తి చెందారు?	1	2	3	4	5

గత నాలుగు వారాల్లో మీరు కొన్ని విషయాలను ఎంత తరచుగా అనుభవించారు లేదా అనుభవించారు అనేదానిని క్రింది ప్రశ్న సూచిస్తుంది.

		ఎప్పు డూ	అరుదుగా	తరచూ	చాలా తరచుగా	ఎల్లప్పు డూ
26	బ్లూ మూడ్, నిరాశ, ఆందోళన, నిరాశ వంటి ప్రతికూల భావాలను మీరు ఎంత తరచుగా కలిగి ఉంటారు?	5	4	3	2	1

మూల్యాంకనం గురించి మీకు ఏవైనా వ్యా ఖ్య లు ఉన్నా యా?
[ఇంటర్వ్యూ పూర్తయిన తర్వా త కింది పట్టికను పూర్తి చేయాలి]

		డొమైన్ స్కో ర్‌లను కంప్యూటింగ్ చేయడానికి సమీకరణాలు	ప్రాథమిక మార్కులు	రూపాంతరం చెందిన స్కో ర్లు	
				4-20	0-100
27	డొమైన్ 1	(6-Q3)+(6-Q4) + Q10+ Q15+Q16+Q17 + Q18	a.=	b:	c:
28	డొమైన్ 2	Q5+Q6+ Q7+Q11+ Q19+ (6-Q26)	a.=	b:	c:
29	డొమైన్ 3	Q20+Q21+Q22	a.=	b:	c:
30	డొమైన్ 4	Q8+Q9+Q12+Q13+ Q14+ Q23 + Q24 + Q25	a.=	b:	c:

ప్రొసీజర్స్ మాన్యు వల్, పేజీలు 13-15 చూడండి

అసెక్స్ (ASEX)

1)మీ లైంగిక సామర్థ్యం ఎంత బలంగా వుంది (sex drive)?

1.చాలా బలంగా ఉంది 2. బలంగా వుంది 3. పాక్షికంగా

4. బలహీనముగా వుంది 5.చాలా బలహీనంగావుంది

2)మీరు లైంగికంగా ఎలా ప్రేరేపింపబడతారు?

1. చాలా సులభంగా 2. సులభంగా 3 పాక్షికంగా

4. చాలా కష్టం 5. ఎప్పుడూ ప్రేరేపించబడలేదు.

3) *ఇది మగవారికి మాత్రమే*

మీరు సులభంగా అంగస్తంభన పొంది దానిని ఉంచగలరా?

1.చాలా సులభంగా 2.సులభంగా 3 పాక్షికంగా

4.కొంత మేరకుకష్టం 5.చాలాకష్టం.

4) ఇది ఆడవారికి మాత్రమే.

మీ సెక్స్ సమయంలో మీ యోని ఎంత తొందరగా తడిబారుతుంది. ?

1.చాలా సులభంగా 2.సులభంగా 3. పాక్షికంగా

4.కొంతమేరకు కష్టం 5.చాలా కష్టం

.మీరు గతవారంలో ఏదైన లైంగిక కార్యకలాపాలు కలిగివుంటే, దయచేసి ఈ క్రింది రెండింటికి కూడా సమాధానాలు ఇవ్వండి.

5) మీరు ఉద్వేగానికి ఎంత సులభంగా చేరుకోవచ్చు?.

1. చాలా సులభంగా 2. సులభంగా 3. పాక్షికంగా

4.కొంత మేరకు కష్టం 5.చాలా కష్టం 6.ఎప్పుడూ ఉద్వేగానికి లోను కాలేదు

6)మీ ఉద్వేగం సంతృప్తికరంగా ఉందా ?

1.చాలా సంతృప్తికరంగా 2.సంతృప్తికరంగా 3.కొంత మేరకు సంతృప్తి వుంది
4.కొంత మేరకు సంతృప్తికరంగా లేదు 5.చాలా సంతృప్తిగా లేదు
6.ఎప్పుడూ ఉద్వేగం సంతృప్తి లేదు.

క్యాన్సర్‌ను వివరించే ప్రకటనలు మరియు క్యాన్సర్ రోగులు మరియు వారి భాగస్వాముల వ్యక్తిగత ఆందోళనలు క్రింద ఇవ్వబడ్డాయి. దయచేసి వాటిని జాగ్రత్తగా చదవండి మరియు మీ సమాధానాలను అవును లేదా కాదు అని గుర్తించండి :

1.క్యాన్సర్ నయం చేయడానికి చికిత్సలు ఉన్నాయి

అవును/ కాదు

2. క్యాన్సర్ అంటువ్యాధి -ఇది సన్నిహిత సంబంధం ద్వారా ఇతరులకువ్యాపిస్తుంది.

అవును / కాదు

3. క్యాన్సర్ రోగులకు ముద్దులు, కౌగిలించుకోవడం, మరియు సాన్నిహిత్యం నిషేదించబడ్డాయి
అవును /కాదు

4 క్యాన్సర్ రోగులతో మరుగుదొడ్డి పంచుకోవడం ఇతరులకుమంచిది కాదు -

అవును / కాదు.

5. కీమోథెరపీ తీవ్రమైన వాంతులు మరియు నీళ్ళ విరోచనాలకు కారణమవుతుంది –

అవును | కాదు

6. రేడియేషన్ చికిత్స శాస్వతంగా జుట్టు రాలడం మరియు చర్మానికి హాని కలిగించవచ్చును.
అవును /కాదు

7 . శస్త్రచికిత్స మాత్రమే శరీరం నుండి క్యాన్సర్ను తొలగించగలవు -

అవును | కాదు.

8. క్యాన్సర్ వ్యాధి గ్రస్తులు తిరిగి వారి పనికి వెళ్ళలేరు -

అవును/ కాదు.

9 క్యాన్సర్ రోగులు బహిరంగ సభలు, విందు కార్యక్రమాలు, మరియు విశ్రాంత కార్యక్రమాలలో పాల్గొనలేరు. -అవును / కాదు.

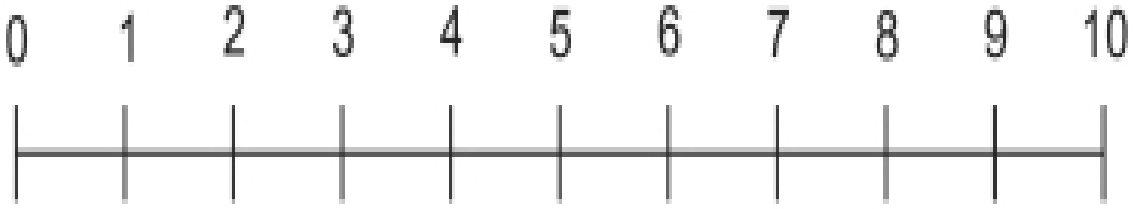
10 క్యాన్సర్ రోగులు వారి చికిత్స తరువాత వారి భాగస్వామితో సన్నిహితంగా ఉండలేరు మరియు వారి దాంపత్యజీవితం తిరిగి మొదలు కాదు అవును/ కాదు

విజువల్ అనలాగ్ స్కేల్ (VAS)

మీరు ఎంత వరకు రిలాక్స్ అయ్యారు అన్నదానిని సూచించడానికి దయచేసి 1 -10 స్కేల్ పైన మార్క్ చెయ్యండి.

అస్సలు రిలాక్స్ అవ్వలేదు

పూర్తిగా రిలాక్స్ అయ్యాము



సెమీ స్ట్రక్చర్డ్ ఇంటర్వ్యూ

ఈ కింది ప్రకటనలు / ప్రశ్న లు నిర్ధారణ అయిన తర్వాత మీ కొన్ని సమస్యలు మరియు ఆందోళనలను అన్వేషిస్తాయి, క్యాన్సర్ తో దయచేసి మీ ఆలోచనలు మరియు భావాలను, అనుభవాలను తెలియజేయడానికి సంకోచించకండి

1.క్యాన్సర్ తో బాధపడుతున్న సమయంలో మీకు క్రింద పేర్కొన్న వాటిలో ఏది ఎక్కువ ఆందోళన కలిగిస్తుంది ?

1.చికిత్స

2.సాధారణంగా పనిచేసే సామర్థ్యం

3.ట్రీట్మెంట్ సైడ్ ఎఫెక్ట్స్

4.ఏదైన ఇతర కారణాలు

2.మీ జీవిత భాగస్వామి/భాగస్వామిగా క్యాన్సర్ మీ పాత్రను ఏ మార్గాల్లో ప్రభావితం చేసిందని

మీరు అనుకుంటు న్నారు?

3. కింద పేర్కొన్న వాటిలో మీ జీవిత భాస్వామితో మీరు ఎక్కువ ఆందోళన చెందె విషయం

1 ఒకరి పై ఒకరికిఆకర్షణీయంగా లేదు

2 మీ జీవిత భాగస్వామితో లైంగిక సాన్నిహిత్యం

లేక పోవడం.

3 మీ జీవిత భాగస్వామి లైంగిక సంబంధం పై

ఆసక్తి కోల్పోవడం.

4 పైన పేర్కొన్న అన్ని

4.మీ జీవిత భాగస్వామి భార్య/భర్తలొ రొజు,తరుచుగా చర్చించే అంశాలు ఏమిటి?

1 మీ రోజువారి పనులు

2 మీ కుటుంబ విషయాలు మరియు మీ పిల్లలు విషయాలు

3 లైంగిక సాన్నిహిత్యం గురించి

4 ఆర్థిక పరమైన అంశాలు

5 భవిష్యత్ గురించి ఆలోచనలు.

5. మీ లైంగిక సంబంధంలో మీరు వ్యక్తపరిచే భావోద్వేగాలు ఏమిటి?

1. సెక్స్ భయం

2. లైంగిక చర్య సమయంలో భారీ అసౌకర్యం

3.ప్రతికూల ఆలోచనలు మరియు భావాలు

4.మీరె ఇతర కారణాలు పేర్కొనండి.

6. మీరు లైంగికంగా క్రియాశీలంగా వున్నారా?, అవును/కాదు

ఒకవేళ మీది అవును అనే సమాధానం అయితే మీరు ఎదుర్కొన్న వివిధ సమష్యలు ఏమిటి ?

a. నొప్పి

b.పొడిబారడం

c.కోరిక లేదు.

d.లైంగిక ఉద్యోగం లేకపోవడం క్షీణించడం

e.ఏ ఇతర కారణాలు.

7.చికిత్సల గురించి మరియు అది లైంగిక పనితీరును ఎలా ప్రభావితం చేయవచ్చు లేదా ప్రభావితం చేయకపోవచ్చు అనే దాని గురించి మీకు సమాచారం ఉందా?

8. మీ లైంగిక సామర్థ్యం పైన సంప్రదాయ క్యాన్సర్ చికిత్సల ప్రభావం ఉందొచ్చు లేక ఉండక పోవచ్చు అనే సమాచారం ఇచ్చార? మీరు మీ మరియు మీ భాగస్వామి లైంగిక సమస్యలను వైద్యుడితో చర్చించారా?

9.ఒకవేళ మీరు మీ సమస్యలను చర్చించకపోతే మీరు ఎలా వ్యవహరిస్తారు?

10 . మీరు ప్రస్తావించదలచిన ఏదైన ప్రత్యేకమైన అంశం వుందా?

IMPORTANT ELEMENTS IN COMPREHENSIVE CANCER CARE ARE:

- EVIDENCE-BASED CANCER THERAPY,
- REDUCING THE SIDE EFFECTS,
- IMPROVING IMMUNITY,
- PHYSICAL REHABILITATION,
- PROVIDING EDUCATION ABOUT SELF-CARE
- STRESS MANAGEMENT

Comprehensive Cancer Care

COMPREHENSIVE CANCER CARE SUPPORT MODULES:

- WEEK 1- SELF-CARE REGIMEN IN CANCER
- WEEK 2- CANCER PAIN MANAGEMENT
- WEEK 3- CANCER-FATIGUE MANAGEMENT
- WEEK 4- RELAXATION TECHNIQUES (to address emotional distress & disturbed sleep)
- WEEK 5- ADHERENCE TO A HEALTHY DIET & PHYSICAL ACTIVITY
- WEEK 6- IMPROVING COMMUNICATION & INTIMACY IN CANCER

SELF-CARE REGIMEN IN CANCER

help to cope with Cancer & its treatment effects

► PHYSICAL LEVEL

Adherence to a nutritious diet- Include fruits, veggies, whole grains, lean protein, and pasteurized products. Consume enough fluids to keep you hydrated and balance your body's minerals.

Adherence to Physical activity- Start slow and build up to the regular exercise of 15-20 min brisk walk, and stretches. Yoga & Meditation would benefit the body as well as the mind.

Regular rest and Sleep. Listen to your body and take a rest when you feel tired.

Maintenance of hygiene- to avoid infections and stay groomed to feel happy and active for the day.

► COGNITIVE LEVEL

Prepare for the phase of Cancer treatment and recovery. Be aware of the treatment side effects.

Face your finances and discuss the cost of cancer care with your doctor/hospital.

Create your own list of goals and Stay positive!

SELF-CARE REGIMEN IN CANCER (Contd..)

- **EMOTIONAL**

Express yourself- Talk to your family, friends, or counselor. Create a support system for yourself. Express through writing, art, and coloring.

De-stress- Find your method to feel better like meditation, relaxation techniques, music, and aroma therapy.

Be aware of your thoughts and how they can make you feel.

Join cancer support groups that help to share your concerns.

- **SPIRITUAL**

Follow your own beliefs and practices such as following religion or faith, meditating, and being connected to supreme power or nature.

Practice mindfulness mediation and prayer as they are a source of strength and help to stay calmer.

Pain in Cancer

Pain is one of the most common symptoms in Cancer patients.

Cancer pain may affect the ability to function, whereas effective pain management can significantly improve the quality of life.

Management of Pain

Each person's diagnosis, cancer stage, response to pain, and personal comfort are different, hence a personal plan to control cancer pain.

Educating the patient and family/caregiver on pain management medication is important.

Non-Pharmacological approach

Physical therapy

Therapeutic massage & Reflexology

Bio-feedback /CBT,

Aroma & Music therapy

Yoga-Meditation,

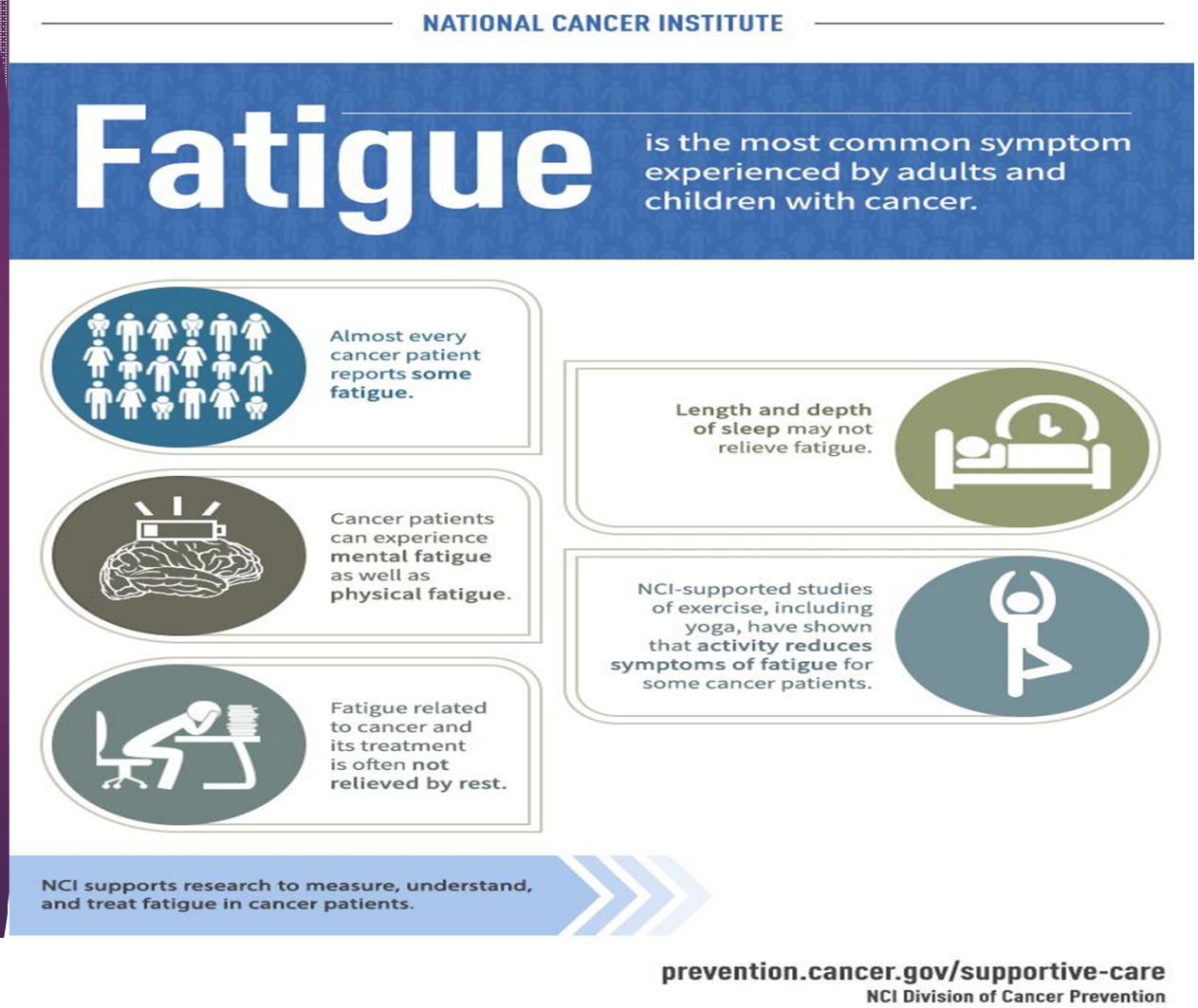
These help to relieve cancer pain by relaxing muscles and nerves and has a calming effect on the mind.

- Physical therapy-TENS(Transcutaneous electric nerve stimulation)
- Exercise and therapeutic massage relax muscles and nerves and help to reduce pain
- Massage has pain relief, reduces swelling, and has psychological benefits
- Reflexology -manual pressure on reflex points which brings biological changes and thereby, reduction in pain perception.
- Psychological approaches in Pain management are Biofeedback, Mindfulness-based stress reduction, and Cognitive behavior therapy.
- Music and Aroma therapy reduce the stress hormone levels, and improve brain waves and blood circulation;
- Yoga & meditation helps to reduce pain sensation and has a calming and healing effect on the body and mind.

Cancer Fatigue (CRF)

Cancer-related fatigue is one of the most common side effects of cancer and its treatments. People who experience cancer fatigue often describe it as ‘paralyzing’ as it comes suddenly without any exertion or based on activity. No amount of rest helps and one feels physically, emotionally, and mentally exhausted most of the time.

Cancer fatigue can last a few weeks (acute) or for months or years (chronic) and can harm the quality and productivity of life.



Management of Cancer Fatigue

- Medication for fatigue in cancer deals with anemia, electrolyte imbalance, pain, and associated medical concerns.
- Stress reduction, progressive muscular relaxation, and strategies to improve sleep could also help to relieve fatigue.
- Protein from pulses, dairy products, and lean meat, rebuilds, and repairs damaged body tissues and energizes the body.
- Intake of adequate water and fluids
- Maintain periods of rest and work , and avoid strain
- Avoid extreme temperature, hot baths, and stimulants like alcohol, nicotine, and caffeine
- Moderate exercise and walking build stamina and strength.
- Maintain an activity log that helps to record periods of cancer fatigue.

Emotional effects & Disturbed Sleep in Cancer

Dealing with the stress of cancer diagnosis, treatment effects, and the financial burden all can affect a person's ability to cope and may cause anxiety, distress, and disturbed sleep.

Persistent insomnia may lead to the risk of developing clinical anxiety or depression.

From Distress to De-stress

- **SLEEP HYGIENE**

Sleeping and waking at a regular time, choosing a dark, comfortable sleep environment with a cool temperature. Relaxing 90 min before sleep, avoiding watching TV, gadgets, bright lights, and stimulants like tea, coffee, and other fluids. Avoid exercises before bedtime.

Spend time in bed only to sleep and not when awake.

Be aware of your negative thoughts related to sleep such as worrying about getting enough sleep and reframe them positively.

- **RELAXATION -**has a calming effect on the body and mind and reduces anxiety and insomnia.

Relaxation techniques that enhance emotional health in Cancer are :

- ✔ Progressive muscular relaxation,
- ✔ Guided imagery,
- ✔ Biofeedback,
- ✔ Mindfulness-based stress reduction,
- ✔ Yoga & Meditation

Meditation Techniques

- Breathe deeply
- Scan your body
- Repeat a sacred name or phrase
- Walking meditation
- Engage in prayer
- Read or listen and take time to reflect
- Focus on your love and gratitude

Benefits of Relaxation techniques

- Learning how to relax your body can help in many other ways than just reducing stress.
  - Lowering blood pressure
  - Slowing your heart rate
  - Slowing your breathing rate
  - Reducing the need for oxygen
  - Increasing blood flow throughout the body
  - Reducing muscle tension

ADHERENCE TO A HEALTHY DIET IN CANCER

A healthy diet provides:

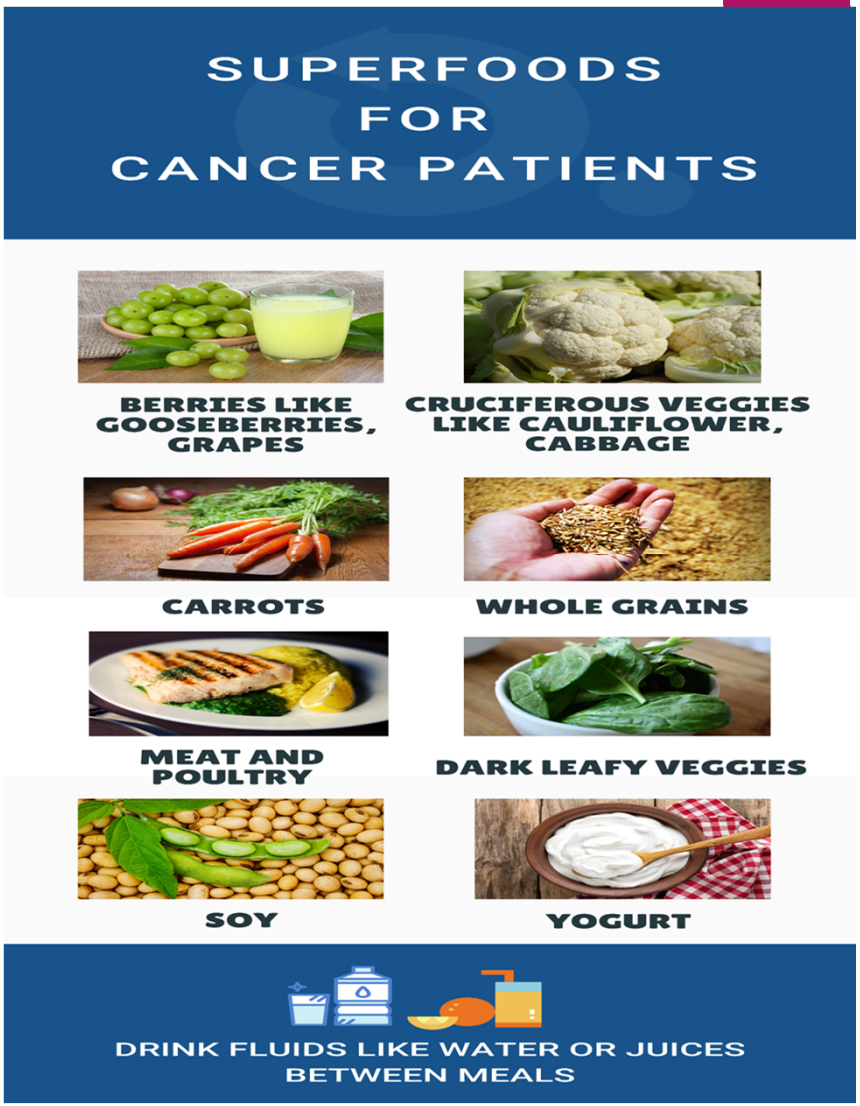
more energy
help to maintain body weight and muscle mass
reduces side effects like nausea, diarrhea
boosts metabolism
improves immunity
better response to cancer treatments &
helps in speedy recovery

A Healthy diet is important at each step in the cancer journey.

Include 80% alkaline foods like fruits, vegetables, whole grains, and beans in your diet.

Adequate water maintains hydration and replenishes electrolytes and fluids in the body

Berries, greens, whole grains, nuts, and seeds are “Cancer-fighting foods”.



ADHERENCE TO PHYSICAL ACTIVITY IN CANCER

Start slow and build up to the regular exercise of 15-20 min. A Brisk walk and stretches, yoga & meditation, and strengthening exercises would work wonders for your body as well as mind.

EXERCISES IMPROVE:

- ✔ HEART PUMPING,
- ✔ BLOOD CIRCULATION,
- ✔ DEVELOP ENERGY & ENDURANCE,
- ✔ EASE PAIN AND STIFFNESS OF JOINTS,
- ✔ IMPROVE SLEEP & METABOLISM

COMMUNICATION & INTIMACY

Talking about cancer: Challenging: involves intense emotions.

Not expressing and talking: accumulate negative emotions such as fear, anxiety, anger, frustration, and sadness.

Communicating is essential.

Likewise, expressing love and affection for one another is very important.

The emotional benefits of physical affection may help in coping with cancer treatment and recovery.

Couple communication

Active listening

Listen keenly to understand what your partner is saying rather than thinking about what to answer.

Sharing your thoughts by writing helps to express feelings and concerns.

Responding to others' comments

Talk openly and honestly about your thoughts and feelings

Listen to your partner without criticism or judgment.

It is important that you and your partner agree on what to communicate with others and what you prefer to keep private from others.

Talking to a health professional/counselor

Talk about any concerns about sexual problems, fertility, body image, or physical limitations, financial worries, or deterioration of illness with your spouse and discuss them with the health professional.

Therapeutic activity : A Model

Sensate focus is a technique used to improve intimacy and communication between partners to reduce sexual anxiety or distress.

This is recommended for couples who want to address problems related to body image, loss or diminished desire, arousal, sexual functioning, and orgasm.

Sensate Focus Exercises: Restarting the Sexual Relationship[4,48,49]

Developed by Masters and Johnson[49] and frequently prescribed by sex therapists, this graduated series of exercises is designed to reduce sexual anxiety, to focus on pleasurable, erotic touch, and to enhance communication about sexual pleasure between partners.

Phase 1. Nonsexual physical exploration: the couple pleasures each other without including the genitals or breasts. The focus is on relaxation and pleasurable touch.

Phase 2. Genital pleasuring: the couple is encouraged to extend caressing to the genitals and breasts. They are encouraged to guide each other to show what is most arousing. The focus is on maintaining relaxation and allowing sexual arousal as touch becomes more erotic.

Phase 3. Resumption of sexual intercourse without thrusting. The couple learns to feel relaxed during vaginal containment.

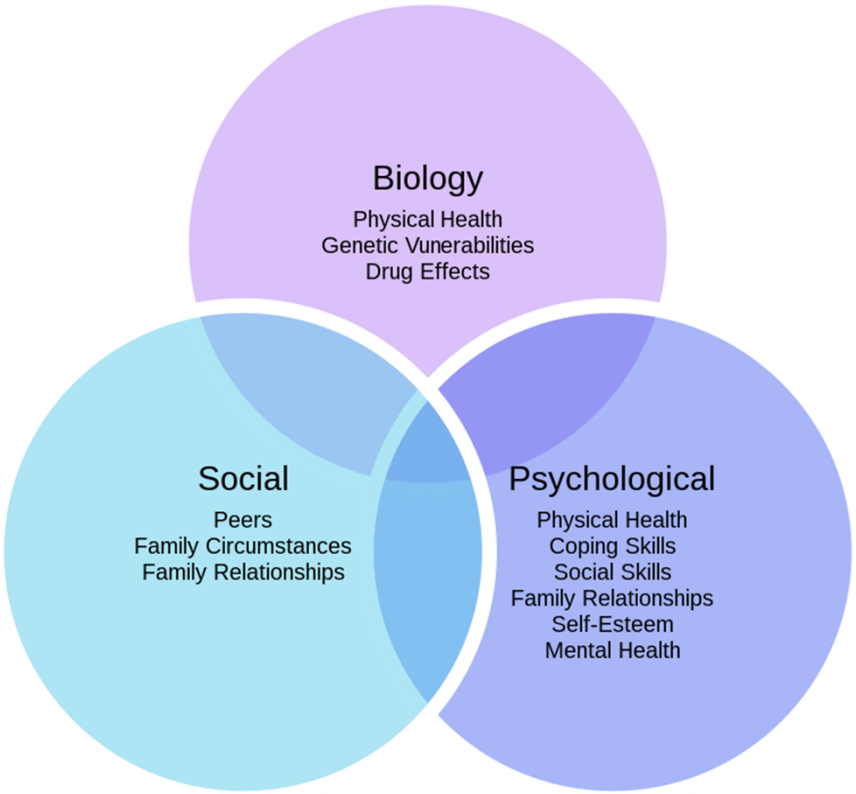
Phase 4. Resumption of sexual intercourse, with the inclusion of thrusting. Partners are encouraged to experiment with different positions.

Sources: Simons et al. *Myofascial Pain and Dysfunction: The Trigger Point Manual*. 1999[4]; Albaugh and Kellogg-Spadt. *Urol Nurs*. 2002[48]; Masters and Johnson. *Human Sexual Inadequacy*. 2010.[49]

BIOPSYCHOSOCIAL MODEL IN CANCER CARE

HEALTH AND ILLNESSES ARE CONSEQUENCES OF THE INTERPLAY OF BIOLOGICAL, PSYCHOLOGICAL & SOCIAL FACTORS (KEEFE, 2011)

THE HOLISTIC APPROACH TO CANCER COMBINES TREATMENT OF 'EVERY ASPECT OF THE PATIENT- PHYSICAL, MENTAL, EMOTIONAL & SPIRITUAL, AND NOT JUST THE DISEASE ONLY.



YOGA NIDRA

Today we will practice the relaxation process that has a profound impact physically and mentally. Be attentive and listen to what I have to say attentively and fully consciously. Stay awake completely until this relaxation process is completed.

To begin with this therapy, lie down straight on your back, stretch your arms to the side, open your palm upwards, stretch the legs neatly, rest the head, neck and spine on the ground and keep it straight as the line is drawn. Stay in a natural state without tightening the body. Slowly close your eyes and take a deep breath after settling into the natural state as mentioned above. Take care not to make any steady movements of the body.

Now take your full concentration slowly up the breath. Take one will *('sankalpa')* with the same concentration and will. This will should be small, direct and compatible. For example I am healthy. Now, while keeping your eyes closed, mentally take your attention and imagination completely from one body part to another in the way it is told. Be attentive and listen to what you are being told carefully without falling asleep with full understanding.

Now turn your entire attention to the right. Right hand thumb, right hand fingers, right palm, right elbow, right shoulder, right hip, right thigh, right knee, right foot, big finger, right foot. Keep the focus on it with a completely calm mind. Move your entire focus to the left now, just like before, left hand thumb, left hand and other fingers, left palm, left elbow, left shoulder, left hip, left thigh, left knee, left foot, big finger, left foot. Now direct your full understanding to the back of the body. The back of the feet, the back of the knees, the back of the thigh, the back of the hip, the back of the waist, the back of the neck, the back of the head. Once again bring your attention forward from the back of the head, and take your attention to the forehead, eyes, ears, nose, poor, cheeks, chin, chin, and now from the room to the bottom of the neck. Divert your entire focus from the neck to the chest, from the chest to the stomach, from the stomach to the eyes and hands.

Now turn your full attention to the natural and normal breathing process. Feel the exhalations and exhalations that come from the nostrils, through the chest, into the stomach without making any effort to change the natural breathing process. In a relaxed manner. follow the breath that travels from the throat to the abdomen with full concentration. Still mentally feel the flow of breathing that goes in and out.

Feel your physical, mental, emotional feelings in such a calm mind. For example, your body is so heavy that you can't move it so much that you can't move it. Now feel that your body is getting much lighter against the other one. It's so easy that your body floats in the air like a cotton ball. Now feel your body warming up and your body is warming up along with your legs and arms. Now feel your body cooling down, the legs, hands and the whole body have cooled down. With the same peace of mind, bring your understanding to a place where there is no light in front of closed eyes. This dark place is called '*chidakasa'*. Feel the colours of '*chidakasa'* with the same concentration. Be aware and feel the pain anywhere in your body, and don't be disturbed and now, try to feel the opposite feeling of happiness. In the same way, understand the negative feelings and feel the emotions associated with them .

Now imagine that on a quiet warm morning you are in a beautiful garden. Feel as you walk in that garden, touching the snow drops. In the silence of the morning, listen to the chirping of mind-blowing birds, enjoy the fragrance of blooming beautiful flowers, and touch the wings of delicate flowers. As you walk along, you reach a pure lake and feel the water flowing gently in

it, the fish swimming. With the same feeling, radiate your gaze to the sun coming from among the distant trees .Continue with the same spirit from protecting the dried, withered leaves of the tree, the fallen, and the newly sprouting leaves of the tree and the birds that inhabit it and many other creatures. Now get the feeling of visiting the holy place in front of you. Locate the mind that rejoices at the beautiful rocks and sculptures on the way to that sacred place. Get the experience of sitting there quietly and meditating with the same concentration and calm ness. Now bring your entire awareness once again to a place where there is no light in front of your eyes, remembering that that is the last step, and now bring your feelings to your thoughts and feelings without any hassles.

Now, with the same concentration, calm ness, and determination, say the *'Sankalpa'* taken at the beginning of this sadhana, 3 times in your mind again with full confidence and firm confidence.

And yet we are about to reach the final stage of this process. Before that, bring the mind and thoughts to the place where you are and the sounds that are heard around you with full understanding. Similarly, bring things near you, over people, and gradually to your physical body. Now slowly turn to your right, moving your eyes and arms. When you are fully awake, sit down slowly with your eyes closed. Open your eyes slowly once you have settled down. Reflect on this process and be faithful to the will you took at the beginning of the sadhana once again, dying out once again.

COUPLEACTIVITY LOG

COUPLE ACTIVITY	DAY	DURATION	FEED BACK
Spending some time together in a day **(Being Together)**			
Do some activities together **(Participation in Activities)**			
Recall & share your past memories **(Recollecting Memories)**			
Discuss present concerns & challenges **(Discussing Present concerns**)			
Express affection by connecting & expressing love to your partner **(Expressing love & affection)**			
Support and Care for one another **(Supporting one another)**			

సమగ్ర క్యాన్సర్ సంరక్షణలో ముఖ్యమైన అంశాలు:

వారం 1- క్యాన్సర్ లో స్వీయ సంరక్షణ నియమావళి

వారం 2- క్యాన్సర్ నొప్పి నిర్వహణ

వారం 3- క్యాన్సర్- అలసట నిర్వహణ

వారం 4- రిలాక్సేషన్ టెక్నిక్ లు (మానసిక క్షోభ మరియు కలత చెందిన నిద్రను పరిష్కరించడానికి)

వారం 5- ఆరోగ్యకరమైన ఆహారం మరియు శారీరక కార్యకలాపానికి కట్టుబడి ఉండటం

వారం 6- క్యాన్సర్ లో కమ్యూనికేషన్ మరియు సాన్నిహిత్యాన్ని మెరుగుపరచడం

క్యాన్సర్ లో స్వీయ సంరక్షణ నియమావళి - మరియు దాని యొక్క చికిత్సా ప్రభావాలను ఎదుర్కోవడానికి సహాయపడుతుంది.

శారీరక స్థాయి

పోషకాహారానికి కట్టుబడి ఉండటం-

శారీరక కార్యకలాపానికి కట్టుబడి ఉండటం-

మీ శరీరం చెప్పేది వినండి మరియు మీరు అలసిపోయినట్లు అనిపించినప్పుడు విశ్రాంతి తీసుకోండి.

రోజంతా సంతోషంగా మరియు చురుకుగా ఉండటం కొరకు అలంకరించుకోవడం.

అభిజ్ఞా స్థాయి

క్యాన్సర్ చికిత్స మరియు రికవరీ దశ కొరకు సిద్ధం కావడం చికిత్స దుష్ప్రభావాల గురించి తెలుసుకోండి.

మీ ఆర్థిక పరిస్థితిని ఎదుర్కొనండి మరియు క్యాన్సర్ సంరక్షణకు అయ్యే ఖర్చు గురించి మీ డాక్టరు/ఆసుపత్రితో చర్చించండి.

మీ స్వంత గోల్స్ జాబితాను సృష్టించండి మరియు సానుకూలంగా ఉండండి!

క్యాన్సర్ లో స్వీయ సంరక్షణ నియమావళి (కొనసాగింపు..)

భావోద్వేగం

మిమ్మల్ని మీరు వ్యక్తీకరించుకోండి-

ఒత్తిడిని తగ్గించడం- ధ్యానం, విశ్రాంతి పద్ధతులు, సంగీతం మరియు అరోమా థెరపీ వంటి మంచి అనుభూతిని పొందడానికి మీ పద్ధతిని కనుగొనండి.

మీ ఆలోచనల గురించి మరియు అవి మీకు ఎలా అనుభూతిని కలిగిస్తాయో తెలుసుకోండి.

మీ ఆందోళనలను పంచుకోవడానికి సహాయపడే క్యాన్సర్ మద్దతు సమూహాల్లో చేరండి.

ఆధ్యాత్మిక

మతాన్ని లేదా విశ్వాసాన్ని అనుసరించడం, ధ్యానం చేయడం మరియు అత్యున్నత శక్తి లేదా ప్రకృతితో అనుసంధానం కావడం వంటి మీ స్వంత నమ్మకాలు మరియు ఆచారాలను అనుసరించండి.

క్యాన్సర్ లో నొప్పి

క్యాన్సర్ నొప్పి పనిచేసే సామర్థ్యాన్ని ప్రభావితం చేస్తుంది, అయితే సమర్థవంతమైన నొప్పి నిర్వహణ జీవిత నాణ్యతను గణనీయంగా మెరుగుపరుస్తుంది.

నొప్పి నిర్వహణ

ప్రతి వ్యక్తి యొక్క రోగనిర్ధారణ, క్యాన్సర్ దశ, నొప్పికి ప్రతిస్పందన మరియు వ్యక్తిగత సౌకర్యం విభిన్నంగా ఉంటాయి.

నొప్పి నిర్వహణ ఔషధాలపై రోగి మరియు కుటుంబం/సంరక్షకుడికి అవగాహన కల్పించడం ఎంతో ముఖ్యం.

నాస్ ఫార్మకోలాజికల్ అప్రోచ్

శారీరక చికిత్స

చికిత్సా మసాజ్ & రిఫ్లెక్సాలజీ

బయో ఫీడ్ బ్యాక్/సిబిటి,

అరోమా & మ్యూజిక్ థెరపీ

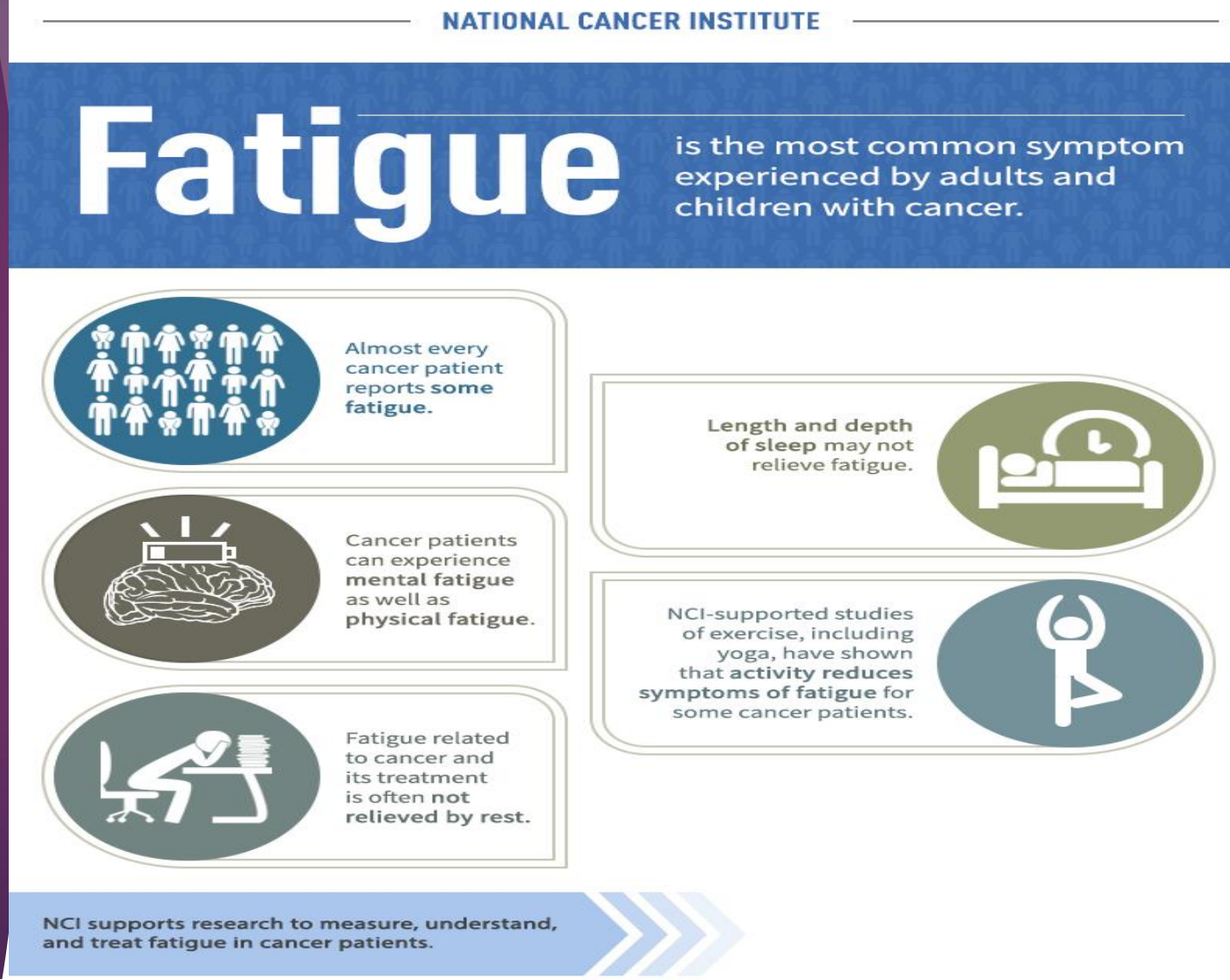
యోగా-ధ్యానం

- ఫిజికల్ థెరపీ-టి.ఇ.ఎన్.ఎస్(ట్రాన్స్ క్యుటేనియస్ ఎలక్ట్రిక్ నరాల ఉద్దీపన)
- వ్యాయామం మరియు చికిత్సా మసాజ్ కండరాలు మరియు నరాలను సడలించి, నొప్పిని తగ్గించడంలో సహాయపడుతుంది
- మసాజ్ వల్ల నొప్పి నుంచి ఉపశమనం లభిస్తుంది, వాపు తగ్గుతుంది మరియు మానసిక ప్రయోజనాలను కలిగి ఉంటుంది
- రిఫ్లెక్సాలజీ - రిఫ్లెక్స్ పాయింట్లపై మాన్యువల్ ప్రెజర్, ఇది జీవసంబంధమైన మార్పులను తెస్తుంది మరియు తద్వారా, నొప్పి గ్రహణశక్తిని తగ్గిస్తుంది.
- నొప్పి నిర్వహణలో మానసిక విధానాలు బయోఫీడ్ బ్యాక్, మైండ్ ఫుల్ నెస్ ఆధారిత ఒత్తిడి తగ్గింపు, మరియు కాగ్నిటివ్ బిహేవియర్ థెరపీ.
- మ్యూజిక్ మరియు అరోమా థెరపీ ఒత్తిడి హార్మోన్ స్థాయిలను తగ్గిస్తాయి మరియు మెదడు తరంగాలు మరియు రక్త ప్రసరణను మెరుగుపరుస్తాయి;
- యోగా మరియు ధ్యానం నొప్పి అనుభూతిని తగ్గించడానికి సహాయపడుతుంది మరియు శరీరం మరియు మనస్సుపై శాంతపరిచే మరియు నయం చేసే ప్రభావాన్ని కలిగి ఉంటుంది.

క్యాన్సర్ అలసట (CRF)

క్యాన్సర్ సంబంధిత అలసట అనేది క్యాన్సర్ మరియు దాని చికిత్సల యొక్క అత్యంత సాధారణ దుష్ప్రభావాలలో ఒకటి.

ఎంత విశ్రాంతి తీసుకోదు మరియు శారీరకంగా, మానసికంగా మరియు మానసికంగా చాలా సమయం అలసిపోయినట్లు అనిపిస్తుంది.



క్యాన్సర్ అలసట నిర్వహణ

- క్యాన్సర్ లో అలసటకు మందులు రక్తహీనత, ఎలక్ట్రోలైట్ అసమతుల్యత, నొప్పి మరియు సంబంధిత వైద్య ఆందోళనలతో వ్యవహరిస్తాయి.
- ఒత్తిడి తగ్గింపు, ప్రగతిశీల కండరాల సడలింపు మరియు నిద్రను మెరుగుపరచడానికి వ్యూహాలు కూడా అలసట నుండి ఉపశమనం పొందడానికి సహాయపడతాయి.
- పప్పుధాన్యాలు, పాల ఉత్పత్తులు మరియు సన్నని మాంసం నుండి ప్రోటీన్, దెబ్బతిన్న శరీర కణజాలాలను పునర్నిర్మించి, మరమ్మత్తు చేస్తుంది మరియు శరీరాన్ని శక్తివంతం చేస్తుంది.
- తగినంత నీరు మరియు ద్రవాలు తీసుకోవడం
- విశ్రాంతి మరియు పని యొక్క వ్యవధిని మెయింటైన్ చేయండి, మరియు ఒత్తిడిని పరిహరించండి.
- విపరీతమైన ఉష్ణోగ్రత, వేడి స్నానాలు మరియు ఆల్కహాల్, నికోటిన్ మరియు కెఫిన్ వంటి ఉద్దీపనలను పరిహరించండి.
- మితమైన వ్యాయామం మరియు నడక స్టామినా మరియు బలాన్ని పెంచుతాయి.
- క్యాన్సర్ అలసట యొక్క కాలాలను రికార్డ్ చేయడానికి సహాయపడే యాక్టివిటీ లాగ్ ని మెయింటైన్ చేయండి.

క్యాన్సర్ లో భావోద్వేగ ప్రభావాలు మరియు చెదిరిన నిద్ర

క్యాన్సర్ నిర్ధారణ, చికిత్స ప్రభావాలు మరియు ఆర్థిక భారం యొక్క ఒత్తిడితో వ్యవహరించడం ఇవన్నీ ఒక వ్యక్తి యొక్క తట్టుకునే సామర్థ్యాన్ని ప్రభావితం చేస్తాయి మరియు ఆందోళన, బాధ మరియు కలత నిద్రకు కారణం కావచ్చు.

సాధారణ సమయంలో నిద్రపోవడం మరియు మేల్కొనడం, చల్లని ఉష్ణోగ్రతతో చీకటి, సౌకర్యవంతమైన నిద్ర వాతావరణాన్ని ఎంచుకోవడం.

నిద్రకు ముందు 90 నిమిషాలు విశ్రాంతి తీసుకోవడం, టివి, గాడ్జెట్ లు, ప్రకాశవంతమైన లైట్లు మరియు టీ, కాఫీ మరియు ఇతర ద్రవాలు వంటి ఉద్దీపనలను చూడకుండా ఉండటం. నిద్రవేళకు ముందు వ్యాయామాలు మానుకోండి.

తగినంత నిద్ర పొందడం గురించి ఆందోళన చెందడం వంటి నిద్రకు సంబంధించిన మీ ప్రతికూల ఆలోచనల గురించి తెలుసుకోండి మరియు వాటిని సానుకూలంగా మార్చండి.

రిలాక్సేషన్ - శరీరం మరియు మనస్సుపై శాంతపరిచే ప్రభావాన్ని కలిగి ఉంటుంది మరియు ఆందోళన మరియు నిద్రలేమిని తగ్గిస్తుంది

ప్రగతిశీల కండరాల సడలింపు,

గైడెడ్ ఇమేజరీ,

బయోఫీడ్ బ్యాక్,

మైండ్ ఫుల్ నెస్ ఆధారిత ఒత్తిడి తగ్గింపు,

యోగా మరియు ధ్యానం

క్యాన్సర్ లో ఆరోగ్యవంతమైన ఆహారానికి కట్టుబడి ఉండటం

ఆరోగ్యకరమైన ఆహారం వీటిని అందిస్తుంది:

శరీర బరువు మరియు కండర ద్రవ్యరాశిని నిర్వహించడానికి ఎక్కువ శక్తి సహాయపడుతుంది
వికారం, విరేచనాలు వంటి దుష్ప్రభావాలను తగ్గిస్తుంది జీవక్రియను పెంచుతుంది
రోగనిరోధక శక్తిని మెరుగుపరుస్తుంది
క్యాన్సర్ చికిత్సలకు మెరుగైన ప్రతిస్పందన మరియు
త్వరితగతిన కోలుకోవడానికి సహాయపడుతుంది

పండ్లు, కూరగాయలు, తృణధాన్యాలు మరియు బీన్స్ వంటి 80% ఆల్కలీన్ ఆహారాలను మీ ఆహారంలో చేర్చండి.

తగినంత నీరు ఆర్ద్రీకరణను నిర్వహిస్తుంది మరియు శరీరంలోని ఎలక్ట్రోలైట్ లు మరియు ద్రవాలను తిరిగి నింపుతుంది.

బెర్రీలు, ఆకుకూరలు, తృణధాన్యాలు, గింజలు మరియు విత్తనాలు "క్యాన్సర్-పోరాట ఆహారాలు".

క్యాన్సర్ లో శారీరక కార్యకలాపాలకు కట్టుబడి ఉండటం

నెమ్మదిగా ప్రారంభించండి మరియు 15-20 నిమిషాల క్రమం తప్పకుండా వ్యాయామం చేయండి. చురుకైన నడక మరియు సాగతీతలు, యోగా మరియు ధ్యానం మరియు బలోపేతం చేసే వ్యాయామాలు మీ శరీరం మరియు మనస్సుకు అద్భుతాలు చేస్తాయి.

వ్యాయామాలు మెరుగుపడతాయి:

- ✓ గుండె పంపింగ్,
- ✓ రక్త ప్రసరణ,
- ✓ శక్తి మరియు ఓర్పును పెంపొందించుకోవడం,
- ✓ నొప్పి మరియు కీళ్ళు దృఢత్వం తగ్గించడం,
- ✓ నిద్ర మరియు జీవక్రియ మెరుగుపరచడం

కమ్యూనికేషన్ మరియు సాన్నిహిత్యం

క్యాన్సర్ గురించి మాట్లాడటం

వ్యక్తీకరించడం మరియు మాట్లాడకపోవడ

కమ్యూనికేట్ చేయడం చాలా అవసరం.

అదేవిధంగా, ఒకరిపట్ల ఒకరు ప్రేమను, ఆప్యాయతను వ్యక్తం చేయడం ఎంతో ప్రాముఖ్యం.

శారీరక ఆప్యాయత యొక్క భావోద్వేగ ప్రయోజనాలు క్యాన్సర్ చికిత్స మరియు రికవరీని ఎదుర్కోవడంలో సహాయపడతాయి.

జంట కమ్యూనికేషన్

యాక్టివ్ గా వినడం

ఏమి సమాధానం ఇవ్వాలనే దాని గురించి ఆలోచించడం కంటే మీ భాగస్వామి ఏమి చెబుతున్నాడో అర్థం చేసుకోవడానికి ఆసక్తిగా వినండి.

ఇతరుల వ్యాఖ్యలకు ప్రతిస్పందించడం

విమర్శలు లేదా తీర్పు లేకుండా మీ భాగస్వామి చెప్పేది వినండి.

ఇతరులతో ఏమి కమ్యూనికేట్ చేయాలి మరియు ఇతరుల నుండి వ్యక్తిగతంగా ఉండటానికి మీరు ఏమి ఇష్టపడతారు అనే దానిపై మీరు మరియు మీ భాగస్వామి అంగీకరించడం చాలా ముఖ్యం.

హెల్త్ ప్రొఫెషనల్/కౌన్సిలర్ తో మాట్లాడటం

లైంగిక సమస్యలు, సంతానోత్పత్తి, శరీర ఇమేజ్, లేదా శారీరక పరిమితులు, ఆర్థిక చింతలు, లేదా అనారోగ్యం క్షీణించడం గురించి ఏవైనా ఆందోళనల గురించి మీ జీవిత భాగస్వామితో మాట్లాడండి మరియు వాటిని ఆరోగ్య నిపుణుడితో చర్చించండి.

CARE MODEL

COMPREHENSIVE CANCER CARE

సెంటర్ ఫర్ హెల్త్ సైకాలజీ, స్కూల్ ఆఫ్ మెడికల్ సైన్సెస్, హైదరాబాద్ విశ్వవిద్యాలయం నుండి "క్యాన్సర్ రోగులు మరియు వారి భాగస్వాములలో లైంగిక ఆరోగ్యం యొక్క మానసిక సామాజిక సంబంధాలు -జోక్యం యొక్క పాత్ర" అనే డాక్టోరల్ థీసిస్లో భాగంగా ఈ విద్యా కరపత్రాలను అభివృద్ధి చేశారు.

యోగనిద్ర

ఈరోజు మనము శారీరకంగా మరియు మానసికంగా లోతైన ప్రభావాన్ని చూపే రిలాక్సేషన్(relaxation) ప్రక్రియని సాధన చేద్దాం.

నేను చెప్పేది శ్రద్ధగ , పూర్తి స్పృహతో మేల్కొని వినండి. ఈ రిలాక్సేషన్ ప్రక్రియ పూర్తయ్యే వరకు నిదురించకుండ పూర్తిగా మేలుకొని ఉండండి.

ఈ ప్రక్రియ మొదలుపెట్టడానికి మీ నడుము పై నిటారుగా పడుకొని చేతులు ప్రక్కకు చాచి, మీ అరచేతిని పైకి తెరిచి, కాళ్లను చక్కగా చాపి, తల, మెడ, వెన్నెముక ను భూమి పై ఆనించి గీత గీసినట్లు నిటారుగా ఉంచండి.

శరీరాన్ని బిగించకుండా సహజ స్థితిలో ఉండండి.

పైన చెప్పిన విధంగా సహజ స్థితిలో స్థిరపడ్డాక నెమ్మదిగా కళ్ళు మూసుకొని లోతుగా శ్వాస తీసుకోండి. శరీరాన్ని స్థిరంగా ఎలాంటి కదలికలు చేయకుండా జాగ్రత్త వహించండి.

ఇప్పుడు మీ పూర్తి ఏకాగ్రతను నెమ్మదిగా శ్వాస పైకి తీసుకువెళ్లండి. అదే ఏకాగ్రత చిత్తం తో ఒక్క సంకల్పాన్ని తీసుకోండి. ఈ సంకల్పం చిన్నగా, సూటిగా మరియు అనుకూలంగా ఉండాలి. ఉదాహరణకి నేను ఆరోగ్యంగా ఉన్నాను. ఇప్పుడు మీ కనులను మూసి ఉంచుతూనే మానసికంగా మీ దృష్టిని మరియు ఊహని పూర్తిగా ఒక శరీర అంగం నుండి మరొక అంగానికి చెప్పబడిన పద్ధతిలో తీసుకువెళ్లండి.

మీకు చెప్పబడే వాటిని శ్రద్ధగా పూర్తి అవగాహనతో నిద్రించకుండా మేల్కొని వినండి.

ఇప్పుడు మీ పూర్తి దృష్టిని కుడి వైపుకు మళ్లించండి. కుడి చెయ్యి బొటనవేలు ,కుడి చెయ్యి వేళ్ళు ,కుడి అరచేయి, కుడి మోచెయ్యి ,కుడి బుజం ,కుడి తుంటి భాగం ,కుడి తొడ ,కుడి మోకాలు ,కుడి పాదం , పెద్దన వేలు ,కుడి పాదం .పై దృష్టిని పూర్తి ప్రశాంత చిత్తంతో ఉంచండి .

ఇందాకటి లాగానే మీ పూర్తి దృష్టిని ఇప్పుడు ఎడమ వైపుకు తరలించండి .ఎడమ చేయి బొటన వేలు ,ఎడమ చెయ్యి మిగిలిన వేళ్ళు ,ఎడమ అరచెయ్యి ,ఎడమ మోచెయ్యి ,ఎడమ బుజం ,ఎడమ తుంటి భాగం ,ఎడమ తొడ ,ఎడమ మోకాలు ,ఎడమ పాదం , పెద్దన వేలు ,ఎడమ పాదం .

ఇప్పుడు మీ పూర్తి అవగాహనని శరీరం వెనుక వైపుకు మళ్లించండి .ముందుగా పాదాల వెనుక భాగం ,మోకాళ్ళ వెనుక భాగం ,తొడ వెనుక భాగం ,తుంటి వెనుక భాగం ,నడుము వెనక భాగం ,మెడ వెనుక భాగం ,తల వెనుక భాగం .

మళ్ళీ ఒకసారి మీ దృష్టిని తల వెనుక నుండి ముందుకు తీసుకురండి ,మీ దృష్టిని నుదిటిపైకి ,కనులపైకి, చెవులపైకి ,ముక్కు మీదకు , పేదల మీదకు ,చెంపల మీదకు ,గదువ పైకి ,ఇప్పుడు గదువ నుండి మీ దృష్టి క్రింద మెడవైపుకు తీసుకెళ్లండి .మెడ నుండి ఛాతి భాగానికి ,ఛాతి భాగం నుండి కడుపుకు ,కడుపు నుండి మీ మొత్తం దృష్టిని కళ్ళు ఇంకా చేతుల వైపు మళ్లించండి .

ఇప్పుడు మీ పూర్తి దృష్టిని సహజమైన మరియు సాధారణ శ్వాస ప్రక్రియ వైపుకు మళ్లించండి .సహజమైన శ్వాస ప్రక్రియను మార్చడానికి ఏ మాత్రం ప్రయత్నించకుండా నాసిక రంధ్రాల నుండి ,ఛాతి గుండా కడుపులోకి వెళ్లి వచ్చే ఉశ్వాసను నిశ్వాసలను అనుభూతి చెందండి . గొంతులో నుండి ,ఉదరంలోకి ప్రయాణించే శ్వాసని పూర్తి ఏకాగ్ర చిత్తంతో అనుసరించండి .

ఇంకా మానసికంగా లోపలికి వెళ్ళే మరియు బయటికి వచ్చే శ్వాస ప్రవాహాన్ని అనుభూతి చెందండి. ఇలాంటి ప్రశాంత చిత్తంలో మీ శారీరక మానసిక భావోద్వేగాలను అనుభూతి చెందండి .

ఉదాహరణకి మీ శరీరం చాలా బరువుగా వుంది అది ఎంత అంటే దానిని మీరు కదల్చలేనంతంగా. ఇప్పుడు ఇందాకటి దానికి వ్యతిరేకంగా మీ శరీరం చాలా తేలికవడం అనుభూతి చెందండి .ఎంత తేలిక అంటే మీ శరీరం దూదిపింజ లాగ గాలిలో తేలేఅంతే.

ఇప్పుడు మీ శరీరం వెచ్చబడడం అనుభూతి చెందండి ,కాళ్ళు ,చేతులతో పాటు మీ శరీరం వెచ్చబడింది.

ఇప్పుడు మీ శరీరం చల్లబడడం అనుభూతి చెందండి ,కాళ్ళు ,చేతులు ఇంకా మొత్తం శరీరం చల్లబడింది.

ఇదే మానసిక ప్రశాంత చిత్తంతో మీ అవగాహనని మూసివున్న కనుల ముందు ఉండే వెలుతురు లేని ప్రదేశానికి తీసుకురండి .ఈ చీకటి చోటునే చిదాకాశ అంటారు .అదే ఏకాగ్ర చిత్తంతో చిదాకాశ లోని రంగులను అనుభూతి చెందండి .

అలానే మీ శరీరంలో ఎక్కడైనా ఉన్న నొప్పిని అనుభూతి చెందండి ,అలాగే కలవరపడకండి దానికి వ్యతిరేక భావమైన ఆనందాన్ని అనుభూతి చెందండి .

ఇలాగే వ్యతిరేక భావాలను అవగాహన చెందుతు ,వాటితో అనుసంధానమై ఉన్న భావోద్వేగాలను అనుభూతి పొందండి .

ఇప్పుడు ఒక ప్రశాంతమైన వెచ్చని ఉదయం మీరు ఒక అందమైన తోటలో ఉన్నట్టు ఊహించుకోండి. ఆ తోటలో మంచు చుక్కలను తాకుకుంటూ మీరు నడిచి వెళ్లే అనుభూతి చెందండి.

ఉదయ నిశ్శబ్దంలో మనసుకు ఆహ్లాదాన్నిచ్చే పక్షుల కిలకిల రావాలు వింటూ, వికసించే అందమైన పువ్వుల సువాసనని ఆస్వాదిస్తూ , సున్నితమైన పువ్వుల రెక్కలను తాకుతూ ముందుకు వెళ్ళండి.

అలా నడుస్తూ నడుస్తూ మీరు ఒక స్వచ్ఛమైన సరస్సు చేరుకొని దానిలో సున్నితంగా ప్రవహించే నీటిని, ఈత కొడుతున్న చేపలని అనుభూతి చెందండి.

అదే అనుభూతితో మీ చూపుని దూరంగా ఉన్న చెట్ల మధ్య నుంచి వచ్చే సూర్యుని పైకి ప్రసరించండి .

చెట్టుకు ఉన్న ఎండిపోయిన, వాడిపోయిన ఆకులు, రాలిన , మళ్ళీ అదే స్ఫూర్తి తో కొత్తగా , చిగురిస్తున్న ఆకులని దానిపైన నివాసం ఉండే పక్షులకి ఇంకా అనేక ప్రాణులకి , రక్షణ-నిచ్చే నుండి అదే స్ఫూర్తితో కొనసాగండి.

ఇప్పుడు మీ ముందున్న పవిత్ర స్థలాన్ని దర్శించే అనుభూతి పొందండి. ఆ పవిత్ర స్థలాన్ని చేరుకునే మార్గంలో ఉన్న అందమైన శిలలని , శిల్పాలని చూసి సంతోషించే మనస్సుని గుర్తించండి. అదే ఏకాగ్రత ప్రశాంతత చిత్తం తో అక్కడ నిశ్శబ్దంగా కూర్చుని ధ్యానం చేస్తున్న అనుభవాన్ని పొందండి. ఇప్పుడు మీ మొత్తం అవగాహనని మరొక్కసారి కళ్ళ ముందు ఉండే వెలుతురు లేని ప్రదేశానికి తీసుకురండి, అదే చివరి దశ అని మననం చేసుకోండి , ఇప్పుడు మీ అనుభూతులను ఎలాంటి అవాంతరాలు లేకుండా మీ ఆలోచనలు భావాల వైపు కి తీసుకురండి.

ఇప్పుడు అదే ఏకాగ్రతత , ప్రశాంతత చిత్తం తో ఈ సాధన ఆరంభం లో తీసుకున్న సంకల్పాన్ని , మీ మనస్సులో మళ్ళీ 3 సార్లు పూర్తి నమ్మకం తో మరియు ధృఢ విశ్వాసం తో చెప్పుకోండి.

ఇంకా మనం ఈ ప్రక్రియ చివరి దశకు చేరుకోబోతున్నాం. దానికి ముందు పూర్తి అవగాహనతో మనస్సుని , ఆలోచనలని, మీరున్న ప్రదేశానికి, చుట్టూ వినిపించే శబ్దాల పైకి తీసుకురండి. అలాగే మీకు దగ్గరలో ఉన్న వస్తువుల పైకి, మనుషుల పైకి, వాటితోపాటు క్రమంగా మీ భౌతిక శరీరం పైకి తీసుకురండి.

ఇప్పుడు మెల్లగా కళ్ళు , చేతులను కదిలిస్తూ మీ కుడి వైపుకు తిరగండి. మీరు పూర్తిగా మేల్కొన్నాక మీ కనులు మూసి వుంచి నెమ్మదిగా కూర్చోండి. ఇలా ఒక్కసారి మీరు స్థిరపడ్డాక నెమ్మదిగా కళ్ళు తెరవండి. ఈ ప్రక్రియని ప్రతిబింబిస్తూ సాధన మొదట్లో మీరు తీసుకున్న సంకల్పాన్ని మరొకసారి మరణం చేసుకొని నమ్మకంగా ఉండండి.

జంట యాక్టివిటీ లాగ్

కపుల్ యాక్టివిటీ	**రోజు**	**గడువు**	**ఫీడ్ బ్యాక్**
రోజులో కొంత సమయం కలిసి గడపడం **(కలిసి ఉండటం)**			
కలిసి కొన్ని యాక్టివిటీస్ చేయండి. **(యాక్టివిటీస్ లో పాల్గొనడం)**			
మీ గత జ్ఞాపకాలను గుర్తుచేసుకోండి మరియు పంచుకోండి **(జ్ఞాపకాలను నెమరువేసుకుంటూ)**			
ప్రస్తుత ఆందోళనలు మరియు సవాళ్లను చర్చించండి **(ప్రస్తుత ఆందోళనలను చర్చించడం)**			
మీ భాగస్వామితో కనెక్ట్ కావడం మరియు ప్రేమను వ్యక్తపరచడం ద్వారా ఆప్యాయతను వ్యక్తం చేయండి **(ప్రేమాభిమానాలను వ్యక్తపరుస్తూ)**			
ఒకరికొకరు మద్దతు మరియు సంరక్షణ **(ఒకరికొకరు మద్దతు తెలుపుకుంటూ)**			

Original Article

Relationship between Psychological States and Coping in Reproductive Cancer Patients in the Context of the Pandemic

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Abstract

Introduction Cancer is known as a disease caused by an uncontrolled division of abnormal cells with the potential to proliferate and destroy body tissues. While it is not uncommon to observe changes in psychological states among patients with cancer, the pandemic situation has been reported to have an impact more severely.

Objectives This study attempts to understand the psychological problems of cancer patients, and the process of coping adopted by reproductive cancer patients during the period of the pandemic.

Materials and Methods This study uses a correlation research design and the tools used for assessment were the four-dimensional symptom questionnaire and Brief COPE inventory. Through nonrandom sampling, a sample of 120 cancer patients diagnosed with reproductive cancer, both male and female from the regional cancer center and private cancer hospitals in Hyderabad, was recruited for the pandemic period from May 2020 to September 2021. Descriptive statistics, correlation, and regression statistical analysis methods were implemented.

Results Significant negative correlation was observed between psychological states and coping. Using multiple linear regression analysis, it was found that distress and depression predict problem-solving coping, distress and anxiety predict emotion-solving coping, and distress predicts adaptive coping.

Conclusion This study examines the psychological factors and coping methods in adapting to the dual challenges of illness and potential risk of infection transmission, and emphasizes designing an effective intervention. During the coronavirus disease 2019 crisis, the lack of support through psychological counseling to address their coping mechanisms to face the challenges is also glaring.

Keywords
- COVID-19
- psychological states
- coping
- psychological distress
- depression
- anxiety

Introduction

A chronic illness like cancer has multiple effects that cross the physiological framework and manifest themselves in psychosocial aspects.[1,2] Many cancer patients suffer from psychological distress, psychosomatic disorders, and psychological crisis during the stages of cancer diagnosis and different phases of treatment.[3,4] Adding to this, the outbreak of coronavirus disease 2019 (COVID-19) has disrupted health services,[5] caused a delay in medical procedures,[6,7] and led to medical complications[8] and cumulative disease burden.[9] As known when compared with the general

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population, the immune-suppressed status of cancer patients due to advanced stage of malignancy or cancer treatments increases the risk of COVID-19 infection transmission.[10] Thus, COVID-19 is experienced as a "syndemic"—a co-occurring, synergistic pandemic that interacts with and exacerbates their existing noncommunicable disease and social conditions.[11] A syndemic exists when risk factors or comorbidities are interwined, interactive, and cumulative-aggravating the disease burden and additively increasing the adverse effects.

This study observes psychological states and different coping strategies in patients diagnosed with cancer during the period of a pandemic. A psychological state is a mental condition in which the quality of the state is relatively constant, even though the state itself may be dynamic. Terluin et al identified four dimensions that describe psychological states: distress, depression, anxiety, and somatization.[12] In simple terms, psychological distress is described as a state of emotional suffering associated with stressors and demands that are difficult to cope with, which is indicative of physical, mental, or emotional exhaustion. Depression causes feelings of sadness, and or loss of interest in activities that one enjoyed before. Anxiety is the body's natural response to stress such as feelings of fear or apprehension about what's to happen; somatization is the expression of psychological or emotional factors as physical (somatic) symptoms. A coping strategy is defined as "a response aimed at diminishing the physical, emotional, and psychological burden linked to stressful life events and daily hassles."[13]

A detailed literature review has been conducted for the study. Cancer is one of the most widely studied diseases that cause significant psychological distress.[14–17] According to Oncology care, NCCN Guidelines (2019), "Distress extends along a continuum, ranging from common normal feelings of vulnerability, sadness, and fears to problems that can become disability such as depression, anxiety, panic attacks, social isolation, and existential and spiritual crisis."[18] This is seen in greater magnitude in the current syndemic situation. Different studies emphasize the role of factors such as a change in lifestyle,[19,20] lack of social support or social interaction,[21] employment issues,[22] and others in the manifestation of certain mental health issues.[23,24]

A systematic review revealed that COVID-19 adversely affected the psychological health of cancer patients. Fear of COVID-19, fear of disease progression, disruption of oncology services, cancer stage, and immune-compromised status were the most common causes of psychological distress in cancer patients, which can influence patients' decisions about treatment as reported in the study.[25] A systematically reviewed community-based studies estimate the prevalence of depression during COVID-19 from 7.45 to 48.30%.[26] Another cross-sectional study observed anxiety and depression are very common and employment loss during a pandemic is positively associated with greater depressive symptoms.[27] An Indian study analyzed COVID-19 induced work stress and found that role overload, family distraction, changes in lifestyle choices, and occupational discomfort were significant predictors of distress during a lockdown.[28]

Research indicates that the potential mental health effects of COVID-19 might be associated with the primary effects of epidemic disease outbreaks and secondary effects of economic recessions/depression, loneliness, quarantine, and social isolation.[29] Important to mention here is the "process of stress amplification," which explains the cumulative burden when two stressors combine and cause multiplicative effects on mental health.[30] Research studies have attempted to explore coping in cancer patients.[31,32] Psychological and coping responses were analyzed in a review-research in the context of the COVID-19 situation, comprising a narrative synthesis of 24 papers and the common themes that emerged in psychological responses are not only anxiety, fear, depression, anger, guilt, grief, loss, post-traumatic stress, and stigmatization, but also a greater sense of empowerment and compassion toward others. A comprehensive systematic review strengthened the evidence for an association between psychological coping and cancer outcome.[33] Research throws light on an individual's coping style and explains that fighting spirit has improved survival rates even in the advanced stage of leukemia.[34] Another study observed that individual coping style determines the intensity of trauma-related symptoms in cancer, where destructive coping style and emotional reactivity account for 55% of the variance of general post-traumatic stress symptoms.[35] Similarly, Laskowska reported with the study findings that a destructive style of coping with stress is less beneficial for the adaptation to cancerous disease and may influence the development of post-traumatic symptoms in persons diagnosed with cancer.[36,37] As mentioned above, research studies related to stress and coping in cancer patients are widely reported across the countries. However, there seems to be a need to explore the psychological states of patients with cancer and their coping mechanism during the challenging phases of the pandemic, especially in the Indian scenario.

Research Objectives

Based on the above review findings, the following objectives have been formed concerning the person diagnosed with reproductive cancer with special reference to the pandemic situation.

1. To examine the psychological states of patients diagnosed with reproductive cancer.
2. To examine coping adopted by patients diagnosed with reproductive cancer.
3. To know the relationship between psychological states and coping in patients diagnosed with reproductive cancer.
4. To find out predictors of coping among patients diagnosed with reproductive cancer

Materials and Methods

Research Design—This study is retrospective, and uses a corelational design to understand the relationship between

psychological states and coping among reproductive cancer patients. The data was collected from regional cancer hospitals and private cancer hospitals in the twin cities of Hyderabad in Telangana state, from May 2020 to September 2021.

Participants: Nonrandom sampling, more specifically convenient sampling, was done; 120 patients diagnosed with reproductive cancer were recruited from hospitals in Hyderabad for the study. Both males and females were diagnosed with reproductive cancer (cancer in the testes, prostate, and penis in males; cancer of the uterus, cervix, ovary, vagina, and fallopian tube in females) of stages 1, 2, and 3, and aged between 18 and 65 years were included in the study.

However, patients with uncontrolled or recurrence of cancer, patients with advanced stages of cancer (stage 4), and patients with a history of other types of malignancies, or known with psychological morbidity (schizophrenia, paranoid disorder, bipolar mood disorder) were excluded from the study. It was ensured by the patients and caregivers that they have not been diagnosed with any psychiatric illness.

Instruments: The psychological instruments used for the study were well-researched tools. The description of tools is as follows.

1. Four-dimensional symptom questionnaire (4DSQ) makes an assessment of distress, anxiety, depression, and somatization in cancer patients. 4DSQ subscales show excellent reliability and validity and Cronbach's α for the four subscales ranged from 0.79 to 0.90.
2. Brief COPE was developed by Carver, a four-point Likert scale consisting of 28 items. It assesses 14 subscales, two items each, which deal with ways a person is coping with stress in his/her life. It shows good reliability and validity. Carver reported and established the reliability and validity of the Brief COPE scale in the original scale (Cronbach's α: 0.570.90).[38]

The psychometric properties of the Brief COPE scale are studied in different contexts.[39,40] A study has categorized these into four-domain problem: focused coping (active coping, planning, and seeking instrumental support), emotion-focused coping (seeking emotional support, positive reframing, and religion), adaptive coping (acceptance and humor), and maladaptive coping (venting, behavioral disengagement, self-distraction, substance use, self-blame, and denial).

Procedure: Data collection has been done after obtaining ethics approval from the parent university and necessary permission from hospital authorities. After obtaining consent from each patient, the measure was administered individually by the researcher. Any doubts or queries from patients were clarified. For the benefit of those who are not comfortable with English, the measures were translated into the vernacular languages (Telugu and Hindi).

Ethical guidelines have been followed for the study. The participants were primarily approached and rapport was generated when the researchers introduced themselves and, the research work's purpose, and other necessary details were told to them. With their consent, psychological instruments were provided and their responses were recorded and complete confidentiality was ensured. Debriefing was done after the procedure.

Statistical Analysis

Descriptive statistics, correlation, and regression statistical analysis methods were implemented. This study used a correlational design to find associations and predictions between psychological states and coping among reproductive cancer patients.

Ethics

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. An approval was taken by Institutional Ethics committee board, School of Medical Sciences, University of Hyderabad, bearing No- UH/IEC/2020/257 for the study.

Results

The following figures portray the analysis of the results starting with descriptive statistics.

►**Fig. 1** displays the diagrammatic representation of the study's distribution of types of reproductive cancer patients. The percentage distribution of types of reproductive cancer patients in this study is as follows. The distribution (n = 120) is as follows: Cervix cancer 60 (50%), Breast cancer 27 (22.5%), Ovarian cancer16 (13.33%), Prostate cancer 5 (4.16%), Endometrial cancer 5 (4.16%), Penis cancer 3 (2.5%), Cancer in vulva 2 (1.6%), Cancer in scrotum 2 (1,6%).

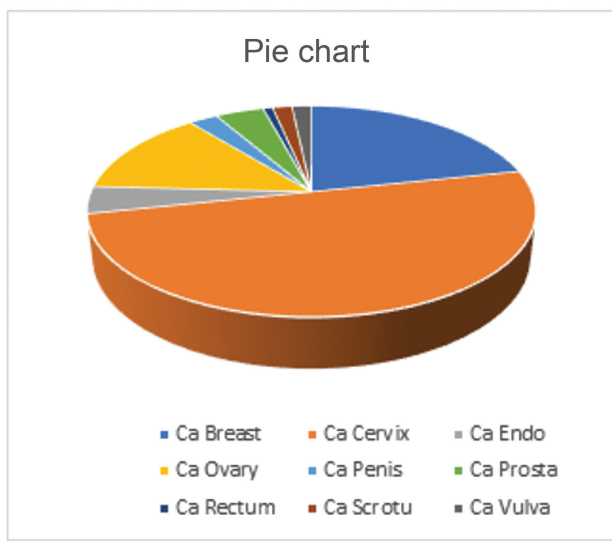

Fig. 1 Pie chart showing distribution of reproductive cancer patients in the sample ($n = 120$). Ca Breast, breast cancer; Ca Cervix, cervical cancer; Ca Endometrium, endometrial cancer; Ca Ovary, ovarian cancer; Ca Penis, cancer in penis; Ca Prost, prostrate cancer; Ca Scrotum, scrotal cancer; Ca Vulva, cancer in vulva.

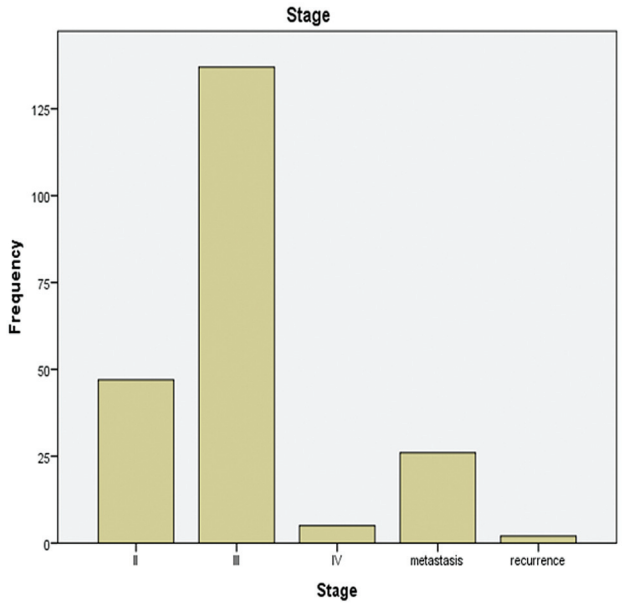

Fig. 2 Bar graph showing the distribution of stages of different types of reproductive cancer in the study. Participants in the study are majorly of reproductive cancer stages 3 and 2.

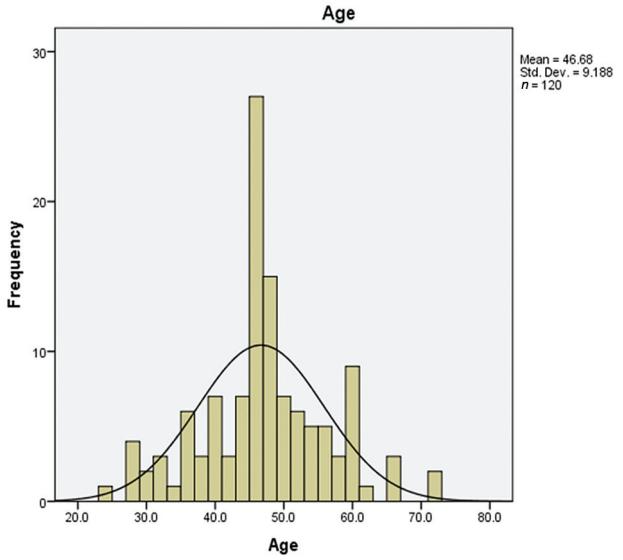

Fig. 3 Bar graph showing age of reproductive cancer patients. Mean age of reproductive cancer patients in the study ($n = 120$).

►**Fig. 2** describes that majority of participants in the study are diagnosed with reproductive cancer stages 3 and 2. Very few cases diagnosed with stage 4, recurrence, and metastasis are included.

►**Fig. 3** displays the normal distribution curve and shows the mean age of reproductive cancer patients is 46.67 years with a standard deviation of 9.33 in the sample ($n = 120$) taken for the study.

The following paragraphs explain the results using statistical analysis.

Objective 1 examined the psychological states of patients diagnosed with reproductive cancer. Accordingly, the psychological states measured using a 4DSQ are distress, depression, anxiety, and somatization.

►**Table 1** demonstrates the mean score of psychological states of patients diagnosed with reproductive cancer. The mean score of distress is 22, somatization is 14, followed by an anxiety score of 9 and the mean depression score of 6. An interpretation of scores is done based on the following description as per the manual. Distress score more than 20 indicates strong elevation; depression score more than 5 indicates strong elevation; anxiety more than 8 indicates moderate elevation; and somatization score more than 10 indicates moderate elevation in psychological states, respectively.

Table1 Mean value of psychological states of patients diagnosed with reproductive cancer

	Mean	SD
DSQ distress	21.79	5.60
DSQ depression	6.33	3.46
DSQ anxiety	8.82	4.62
DSQ somatization	14.43	6.45

Abbreviations: DSQ, dimensional symptom questionnaire; SD, standard deviation.

Objective 2 measured the coping strategies adopted by patients diagnosed with reproductive cancer. In this study, 14 different types of coping are measured using a Brief COPE inventory.

►**Table 2** demonstrates the mean and standard deviation values for the 14 types of coping.

According to the Brief COPE scale, the dimensions are active coping (M = 3.86), planning (M = 3.30), instrumental

Table 2 Types of coping measured using Brief COPE inventory (BCI)

Coping types	Mean	Standard deviation
BCI-active coping	3.86	2.02
BCI-planning	3.30	1.73
BCI-instrumental support	4.73	1.79
BCI-emotional support	6.05	2.31
BCI-positive reframing	2.53	1.60
BCI-religion	4.10	1.81
BCI-acceptance	3.78	1.59
BCI-humor	1.89	0.84
BCI-venting	5.06	1.59
BCI-behavioral disengagement	4.06	1.86
BCI-self-distraction	4.99	1.82
BCI-substance use	1.98	0.80
BCI-self-blame	3.19	1.77
BCI-denial	3.49	1.46

Table 3 Mean values of four types of coping

Types of coping	Mean (M)	Standard deviation (SD)
Problem focused coping	11.88	4.77
Emotion focused coping	12.69	4.46
Adaptive coping	5.70	1.95
Maladaptive coping	22.98	6.04

►**Table 3** shows the Mean values of four broad categories of coping styles.

support (M = 4.73), emotional support (M = 6.05), and positive reframing (M = 2.53), religion (M = 4.10), acceptance (M = 3.78), humor (M = 1.89), venting (M = 5.06), behavioral disengagement (M = 4.06), self-distraction (M = 4.99), substance use (M = 1.98), self-blame (M = 3.19), and denial (M = 3.49).

The Brief COPE measures fourteen different coping strategies that are broadly grouped into four coping types: problem-focused, emotion-focused, adaptive and maladaptive coping. In this study, the maladaptive coping measure is the most common, and adaptive coping is very less seen among reproductive cancer patients (►**Table 3**).

Objective 3 explored the relationship between psychological states and coping in patients diagnosed with reproductive cancer.

The correlation matrix (►**Table 4**) indicates a significant negative correlation between distress and problem-focused coping (-0.52^{**}), emotion-focused coping (-0.34^{**}), and adaptive coping (0.31) in the given sample ($n = 120$) for the study. The results indicate that when distress is high in the sample, the coping types such as problem-focused, emotion-focused coping, and adaptive coping values are low and vice versa. Thus, all values of association between distress and coping indicate a negative relationship at a significant level.

There is a negative correlation established between depression and problem-focused (0.53^{**}), emotion-focused (-0.27^{**}), and adaptive coping (-0.34^{**}) in the study. This signifies that when depression is high, problem-focused, emotion-focused, and adaptive coping measures are low, and vice versa. Thus, all values of association between depression and coping indicate a negative relationship at a significant level.

There is a negative association seen between anxiety and problem-focused (-0.36^{**}), emotion-focused (-0.09), adaptive coping (-0.33^{**}), and maladaptive coping (-0.07), which signify that when anxiety is high, all the above four types of coping measures are low and vice versa. Thus, values of association between anxiety and problem-focused and adaptive coping indicate a significant negative relationship.

There is a negative association seen between somatization and problem-focused (-0.33^{**}) coping and adaptive coping (-0.22^{**}), whereas, there is no association between somatization and two other types of coping such as emotion-focused coping and maladaptive coping Thus, values of association between somatization and problem-focused coping as well as adaptive coping indicate a negative significant relationship.

Objective 4 found predictors of coping strategies in patients diagnosed with reproductive cancer.

Multiple regression analysis was done with problem-focused coping as the criterion, and distress, depression, and anxiety as predictors. The analysis gave rise to three models (►**Table 5**).

In the first model, distress is taken as a predictor and the model significantly explains 27% of the variance in problem-focused coping strategy $F(1, 118) = 43.21$, $p < 0.001$. In the second model, depression is added as a predictor and the model predicts 31% of the variance $F(1, 117) = 26.74$, $p < 0.01$, the R square change is 0.05, and the p-value is significant at 0.01 level. In the third model, when anxiety is added as a predictor, the results show that the R square change is not significant. Thus, ►**Table 6** indicates that distress and depression are significant predictors of problem-focused coping.

Table 4 Correlation matrix between psychological states and coping

	4DSQ Ds	4DSQDp	4DSQAx	4DSQSo	BCIPF	BCIEF	BCIA	BCIMA
4DSQDs	1							
4DSQDp	0.736^{**}	1						
4DSQAx	0.632^{**}	0.646^{**}	1					
4DSQSo	0.466^{**}	0.529^{**}	0.634^{**}	1				
BCIPS	-0.518^{**}	-0.526^{**}	-0.359^{**}	-0.330^{**}	1			
BCIES	-0.339^{**}	-0.268^{**}	-0.088	-0.069	0.785^{**}	1		
BCIA	-0.314^{**}	-0.341^{**}	-0.333^{**}	-0.223^{*}	0.700^{**}	0.609^{**}	1	
BCIMA	-0.043	0.079	0.068	0.086	0.568^{**}	0.746^{**}	0.446^{**}	1

Abbreviations: BCIA Brief COPE inventory adaptive; BCIEF, Brief COPE inventory emotion-focused; BCIMA BCI maladaptive; BCIPF, Brief COPE inventory problem-focused; 4DSQ Ds, four-dimensional symptom questionnaire distress; 4DSQ Dp, 4DSQ depression; 4DSQ Ax 4DSQ anxiety; 4DSQ So 4DSQ somatization.
**Significant at 0.01 level.
*Significant at 0.05 level.

Table 5 Summary of multiple linear regression analysis for variables predicting problem focused coping

Model and predictor variables	B	SE B	B	*t*	R^2	ΔR^2
Model 1						
DSQ Ds	−0.44	.07	−0.52	−6.57	0.27	0.27
Model 2						
DSQ Ds	−0.24	0.10	−0.28	−2.52		
DSQ Dp	−0.43	0.16	−0.32	−2.80	0.31	0.05
Model 3						
DSQ Ds	−0.25	0.10	−0.30	−2.52		
DSQ Dp	−0.46	0.17	−0.33	−2.77		
DSQ Ax	−0.05	0.11	0.05	0.45	0.31	0.00

Abbreviations: DSQ Ax dimensional symptom questionnaire anxiety DSQ Ds, DSQ distress; DSQ Dp, DSQ depression; ΔR^2, R^2change; B, unstandardized coefficient; SEB, standardized error of beta; β, standardized coefficient.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Table 6 Summary of multiple linear regression analysis for variables predicting emotion focused coping

Model and predictor variables	B	SE B	β	*t*	R^2	ΔR^2
Model 1						
DSQ Ds	−0.27	0.07	−0.34	−3.92	0.115	0.115
Model 2						
DSQ Ds	−0.25	0.10	−0.31	−0.24	0.116	0.00
DSQ Dp	−0.05	0.16	−0.04	−0.31		
Model 3						
DSQ Ds	−0.31	0.11	−0.40	−2.98	0.150	0.034
DSQ Dp	−0.18	0.17	−0.14	−1.04		
DSQ Ax	−0.24	0.11	0.25	2.15		

Abbreviations: DSQ Ax dimensional symptom questionnaire anxiety DSQ Ds, DSQ distress; DSQ Dp, DSQ depression; ΔR^2, R^2change; *B*, unstandardized coefficient; SEB, standardized error of beta; β, standardized coefficient.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Likewise, multiple regression analysis is done where distress, depression, and anxiety are taken as predictors for emotion-focused coping. The analysis gives rise to three models (►**Table 6**). In the first model, distress is taken as a predictor and the model significantly explained 11.5% of the variance in emotion-focused coping, F (1, 118) = 15.35, $p < 0.001$. In the second model, depression is added as a predictor and the model shows 11.6% of the variance emotion-solving coping, F (1, 117) =7.67, and the R square change is zero and hence not significant. In the third model, when anxiety is added as a predictor, the model shows a 15% variance in emotion-solving coping, F (1, 116) =6.80, $p < .05$, and the R square change is found 0.03, and the *p*-value is significant at 0.05 level. Thus, ►**Table 6** shows that distress and anxiety are significant predictors of emotion-focused coping among patients diagnosed with reproductive cancer.

Subsequently, multiple regression analysis is done with adaptive coping as a criterion, and distress, depression, and anxiety as predictors. The analysis gives rise to three models (►**Table 7**). In the first model, distress is taken as a predictor and the model significantly explained 9% of the variance in adaptive coping, F (1, 118) = 12.95, $p < 0.001$. In the second model, depression is added as a predictor and the model shows 11% of the variance in adaptive coping, F (1, 117) =8.36, and the R square change is 0.03 and the *p*-value is not significant. In the third model, when anxiety is added as a predictor, the model shows a 12% of variance in emotion-solving coping, F (1, 116) =6.34, and the R square change is found 0.02, and the *p*-value is not significant. Thus, ►**Table 7** shows that distress is a significant predictor of adaptive coping among patients diagnosed with reproductive cancer.

Table 7 Summary of multiple regression analysis for variables predicting adaptive coping

Model and predictor variables	B	SEB	B	*t*	R^2	ΔR^2
Model 1						
DSQ Ds	−0.11	0.03	−0.31	−3.60	0.09	0.09
Model 2						
DSQ Ds	−0.05	0.04	−0.14	−1.08	0.11	0.03
DSQ Dp	−0.13	0.07	−0.24	−1.87		
Model 3						
DSQ Ds	−0.03	0.05	−0.08	−0.59	0.12	0.02
DSQ Dp	−0.10	0.08	−0.17	−1.26		
DSQ Ax	−0.07	0.05	−0.17	−1.46		

Abbreviations: DSQ Ax dimensional symptom questionnaire anxiety DSQ Ds, DSQ distress; DSQ Dp, DSQ depression; ΔR^2, R^2change; *B*, unstandardized coefficient; SEB, standardized error of beta; β, standardized coefficient.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Discussion

Cancer may affect individuals irrespective of their age, gender, and socioeconomic background. This study shows the mean age of reproductive cancer patients is 46.7 years (►**Fig. 3**). In this study, mean values of psychological states demonstrate that there is a strong elevation in the scores of distress and depression (►**Table 1**); the scores of anxiety and somatization are on the moderately higher side among the patients diagnosed with reproductive cancer. A study observed that when diagnosed with cancer, approximately 30% of the patients may suffer extreme psychological distress or other mental conditions.[41] Similar findings are observed in the studies that psychological distress was high and the pandemic had an adverse effect on the mental health of the people.[42] Patients had more difficulty coping with cancer during the pandemic as there is increased concern regarding susceptibility to infection and concerns regarding their cancer treatment outcomes.[43]

In the present research, it is observed from the mean score of different types of coping (►**Table 2**) that seeking emotional support is reported very high (76%), followed by venting (63%), self-distraction (62%), instrumental support (59%), religion (51%), and behavioral disengagement (50%). On the other hand, humor (23%), substance use (25%), and positive reframing (31%) coping strategies are seldom used by patients diagnosed with reproductive cancer. Diverse coping strategies are observed in this study such as venting, which points to giving expression to one's emotions and seeking emotional support for attaining moral support, sympathy, compassion, and care among patients diagnosed with cancer.

In this study, it is observed that more than 60 (50%) people find some peace and solace in following their religious and spiritual beliefs in the process of coping with cancer. Research acknowledges that religion serves as a source of emotional support and spirituality serves as a strong coping mechanism providing spiritual strength and a healing touch to body and mind during cancer.[44] In this study, maladaptive coping is observed highest, and adaptive coping method is the least observed among reproductive cancer patients (►**Table 3**). The correlation matrix (►**Table 4**) demonstrates a significant negative correlation between psychological states and coping methods. A review of related studies demonstrates similar findings supporting the present research that changes owing to a pandemic such as lack of social interaction and support, lifestyle changes, issues in the work front, and added family responsibilities contributed to psychological distress and the manifestation of mental health issues.[45,46]

To summarize, this study observed a significant negative correlation between psychological states and coping in patients diagnosed with reproductive cancer. Predictors of coping are thereby inferred using multiple linear regression analysis (►**Tables 5–67**) that distress and depression are predictors of problem-focused coping; distress and anxiety are predictors of emotion-solving coping; and distress is the predictor of adaptive coping among patients diagnosed with reproductive cancer.

Strengths and Limitations of the Study

There seems to be a sparsity of Indian studies that indicate the statistics related to cancer populations in India, during the pandemic phase. The diverse age of the participants, the inclusion of persons from the rural and urban areas, both men and women, the study conducted during the pandemic, and exploring their challenges are the key strengths of the study. Research explains that psycho-oncology gives insight into taking care of cancer patients, explaining the psychological issues in oncology settings from the communication of diagnosis to treatment and end-of-life care.[47,48] This study explored the psychological states and coping mechanisms of cancer patients during the pandemic, while taking necessary precautions to safeguard their health, and imparted psycho-education and psychosocial support for holistic cancer care.

In this study, as there was no baseline data collected before the onset of the COVID-19 pandemic, and the data collection was done during the pandemic phase, comparison with non-COVID-19 situation was not possible. Hence, whether the findings are attributable to the existent COVID-19 situation is not clear within the scope of the study that becomes a limitation of the study.

The Implication of the Study

It is important to mention that the augmentation of factors such as social support and information from authentic sources, dealing with the economic and financial burden, and changes in the environment and lifestyle owing to the COVID-19 pandemic emphasize the need for supportive psychosocial interventions as per the previous research.[49] The findings explain the adverse effects of the pandemic and possible interventions such as telepsychology and online psychological treatments to decrease the negative effects of the pandemic. Thus, a future direction seen is to expand the scope of the study to an interventional model. Supportive psychosocial interventions to deal with psychological states and better coping are recommended for future research.

Ethics

The study fulfills research ethics and the Helsinki declaration, and approval was taken from the Institutional ethics committee, the University of Hyderabad on 24–2-2022 (UH/IEC/2020/257). Informed consent and participation informed sheet were provided to the participants and complete confidentiality was assured for the study.

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None.

Conflict of Interest

None declared.

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A Thematic Analysis on an Exploration of Concerns of Cancer Patients and their Caregivers in the Context of the COVID-19 Pandemic.

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- **Abstract:** Background: COVID-19, a pandemic prevalent for a long time presents a multistep crisis;the first stage is an acute health crisis, followed by a healthcare recovery crisis in the second stage and a socio-economic crisis in an indefinite period. The study explores the challenges and specific concerns among patients diagnosed with cancer and their caregivers during the pandemic. Materials and Method: Qualitative research employs specific research methods such as in-depth interviews, content analysis, observation methods, and life histories or biographies to examine people's experiences in detail. In the present study, a semi-structured questionnaire was developed and interviews were conductedto understand the experiences of cancer patients andtheir caregivers with health care and their daily challenges during the pandemic. A Non-random sampling method, involving males and females, within the age group of 18 to 65 years, and their primary care providers from the Regional Cancer Centre and other cancer hospitals are followed. Semistructured interview responses were collected from cancer patients and their caregivers., illustrative quotes were summarised and key themes from the interviews were extracted. Results and analysis: 9 Key themes with 20 subthemes were extracted in the content analysis. Difficulty having access to medical care, fear of infection transmission, lack of social support, loss of income source, drastic lifestyle changes, uncertainty about disease cure, and apprehension about the future,which result in cumulative disease burdenhave been frequently reported in the study. Conclusion: The current research is relevant in describing the experiences and perspectives of cancer patients and their caregivers, throwing light on the psychosocial issues and challenges during the pandemic situation, thus emphasizing the need for developing a supportive psychosocial intervention.

Original Article

A Thematic Analysis on an Exploration of Concerns of Cancer Patients and their Caregivers in the Context of the COVID-19 Pandemic

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Conclusion: The current research is relevant in describing the experiences and perspectives of cancer patients and their caregivers, throwing light on the psychosocial issues and challenges during the pandemic situation, thus emphasizing the need for developing a supportive psychosocial intervention.

Keywords: Psychosocial issues, Health care challenges during pandemic, Cancer, and Corona, Psychosocial intervention

Introduction

The pandemic-coronavirus disease (COVID-19) profoundly affected all aspects of life, such as health care, family dynamics, finance, social life, and the surrounding environment. The research

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explored the challenges during a pandemic crisis and closely examined the difficulties faced by patients diagnosed with chronic diseases like cancer who may need long-term medication and regular health assessment.[1,2]The lockdown has hindered the delivery of specialized medical services, drugs, and other healthcare needs to these patients.[3,4] While it disruptedthe lives of all in many ways, patients with chronic health problems and those who needed regular healthcare checks or procedures were the most affected. The caregivers of such patients also have to withstand the impact owing to the uncertainties and outcomes.

A study on the impact of COVID-19 on cancer patients (Zhang et al., 2020) found that 28.6% of study patients contracted the coronavirus due to nosocomial infection while hospitalized for their cancer treatment. This article describes cancer treatment given within 14 days of the COVID-19 diagnosis was reported as a risk factor for developing medical complications such as acute respiratory distress syndrome (28.6%), septic shock (3%), and acute myocardial infection (3.6%).[5] Thus, knowing the challenges and dilemmas,Tsamakis et al., 2020emphasized the screening for COVID infection and strict infection control measures in oncology units.[6] Self-isolation and quarantine are the first strategies recommended worldwide to slow down the spread of pandemics, but the restrictions also impose deliberate social isolation.[7] With little support, caregivers faced serious challenges in caring for their loved ones struggling with chronic diseases like cancer during the pandemic period (Shankar et al., 2020).[8]

The rationale of the study:

Chronic diseases like cancer present challenges in accessing medical care for ongoing treatment regimens like chemotherapy, radiation, or surgical procedures during the pandemic. Any delay in medical procedures could lead to disease progression, resulting in complications and a cumulative disease burden. On the other hand, a caregiver's dilemma is having to attend to their medical and other day-to-day needs without any social support to add to their woes. An attempt is made to explore the impact of the pandemic on cancer patients and caregivers in the present study.

Objectives of the Research

The present study focuses on the COVID-19 Pandemic, discussing psychosocial issues and challenges faced by patients diagnosed with cancer and their primary caregivers.The objectives of the research are:

1. To investigate cancer patients' difficulties and psychosocial issues during the COVID-19 pandemic phase.
2. To study caregivers' challenges and coping strategies during the pandemic period

Materials and Methods

One-on-one interviews were conducted with 18 cancer patients and their caregivers to capture in-depth information about their experiences and challenges during the prevailing pandemic period. An attempt was made to understand the psychosocial factors that play a significant role in providing quality care to cancer patients. This study also explores caregivers' challenges in coping with the prevailing pandemic situation.

Participant recruitment for qualitative interviews

A total of 36 participants, including 18 patients and their caregivers, both male, and female, within the age group of 18 to 65 years, from the Regional cancer center were recruited for the present study. Interviews facilitated by a semi-structured interview guide, lasting approximately 20–30 minutes were conducted for both groups (cancer patients and caregivers) and field notes and their responses were recorded.

Questionnaire Development

Interaction with health care providers, including doctors, nurses, and social workers, and the researcher's own experience as a medical professional attending to queries and concerns from cancer patients and their families helped to develop a semi-structured interview questionnaire. A total of twenty-four questions were included and when the tool was administered to 3 cancer patients along with their caregivers, whatever questions were not properly understood were reframed. Wherever necessary, spontaneous secondary and relevant questions were asked for better exploration. There are no positive

or negative answers andtherefore, no marks were allotted. Instead, all the participant's responses to the questions were carefully noted.

Collection of Data

Interviews were conducted by the researchers during the pandemic period. Participants were informed about the purposes and format of the interview as well as their rights, and informed consent was obtained. Socio-demographic and health questions included were direct and closed-ended, whereas open-ended questions were asked to explore their challenges and experiences during the pandemic period. The impact of the pandemic on health care, personal aspects (physical, emotional, and social), lifestyle changes, crisis if any, and their coping methods were noted. Any other factors that are important and have an impact on their lives were also included in the study.

Analysis of Data

The characteristics of the participants were summarized. The interview transcripts were reviewed and given numbers to maintain patient confidentiality and ensure transcript completeness and accuracy. The data underwent "thematic analysis" following a prescribed coding framework involving the extraction and review of excerpts, with new codes added as themes and concepts emerged from the data. Key themes and sub-themes related to patient experiences and caregivers' challenges during the pandemic were summarised and illustrative interview quotes were used to support the key findings identified from the interview transcripts.

Results

Sample characteristics: qualitative interviews

Interviews were conducted with 18 cancer patients from the regional cancer center and private hospitals along with their caregivers. There are 10 female and 8 male cancer patients in the given sample. The majority of participants in the caregiver's group were female, with the formal education of tenth or twelfth grade only, from a lower or middle socioeconomic status, and rural (12) as well as urban (6) areas. The mean participant age of cancer patients is 46 years old, and that of caregivers is 58 years old. Despite common responses by the participants, there were differences found in symptoms, contributors, coping, and progression of illness among cancer patients and their caregivers.

The transcribed data (semi-structured interview) was segmented, and responses were carefully analyzed and coded into sub-themes (20) and themes (9). Below are the illustrative quotes that describethe Interview participant's experiences and verbal responses on the impact of COVID- 19.

Key themes (Subthemes)are derived from the Illustrative Quotes. Here, (P) refers to cancer patients and (C) refers to Caregivers.

1. Healthcare needs & availability

(Access to medical information, Access to treatment, and Availability of drugs & healthcare resources during the pandemic)

(P) 'I have no idea when I will have my next treatment.

(P) 'It was miserable and I couldn't tolerate the pain and wanted to go to the hospital,' said a patient.

(C) 'We were trying to connect to the hospital several times, but they didn't answer.

(C) 'Where would we get medicine from during lockdown? Medicines for pain (morphine) are not available outside.

(C) "Buses or other transport were not available to travel to the hospital," remarked a caregiver.

2. Fear of infection

(Fear of corona infection, Expressed anxiety/ worry, Distress)

(P) One lung cancer patient anticipated the risks. I think all the treatment will go to waste if I get infected with the coronavirus. It may lead to serious complications and I may infect others too.

(P) Another participant commented, "If not for COVID, cancer would kill me."

(C) A lady expressed her fear of infection to her son as he is undergoing chemotherapy for cancer at a private hospital. She said, "What if he gets a Corona from the hospital itself?" I am tense and don't know what is right and what could go wrong at any time.

(C) "My parents are very old and there is always a risk of infection transmission to them."

(C) Another caregiver was anxious and upset about hospitals' not taking enough precautions and allowing the mixing of staff from the COVID Ward to the Oncology Block. "The hospital having a COVID block in the nearby premises is a threat to my family," he said.

3. Social challenges

(Lack of social interaction, reported lack of social support)

(P) "Sitting alone all day without even seeing someone and having nothing to do is very frustrating", a young cancer patient responded.

(C) 'I can't even get my parents home for some support due to the pandemic situation.'

(C) Due to the pandemic, even my helper is not coming and I can't seek any relative's help. I am so tired and left with no time for myself".

(C) 'Having no help from anywhere during a pandemic is tough', said a caregiver.

4. Financial challenges"

(Loss of business /income source/Loss of job)

(P) "I have applied for long-term leave and have had no salary for the past 4 months, said a cancer patient who is undergoing radiation treatment".

(C) A caregiver said, 'owing to a pandemic, our Kirana shop is closed and my elder son gets only half his salary.'

(C) 'We are left with very little money having no daily wage work and worried about my wife's treatment for breast cancer, a caregiver expressed.

5. Work-life balance"

(Challenges of working from home, online classes for children, managing office work and domestic chores)

(C) A caregiver expressed her woes that 'working from home and managing things at home is a double challenge'.

(C) 'Attending children having online classes and me working from home and taking care of my husband diagnosed with Prostate cancer is somewhat difficult.

6. Lifestyle disruption

(Procurement of Items,Lifestyle changes, Absence of Leisure activity)

(P) One cancer patient expressed his difficulty, 'I can't go out to buy any essentials even from nearby shops.

(P) Another patient said, 'I can't go out with my friends for my regular walks. I am always sitting at home.

(C) "There is no leisure activity when you work from home and it's like full-time work", remarked a caregiver.

7. Difficulty in adaptation to pandemic protocols

(Using face mask &sanitizer)

(P) One elderly patient diagnosed with lung cancer expressed anguish over the pandemic situation. He said 'I feel suffocated using masks all the time and even seeing others in masks makes me feel anxious.'

(C) "It is difficult to wear a mask and sanitize premises now and then".

8. Strategies of management

(Dealing with the changes and adjustment, self-care regime)

(P) 'I take precautionary steps such as using a mask, sanitizer very often and strictly avoids public places which are very crowded' as told by a breast cancer patient.

(C) A caregiver expressed, 'We regularly do self-care practices like yoga and breathing exercises. Also, we eat a nutritious diet and herbal supplements to boost our immunity.'

9. Fear of uncertainty

(Uncertainty & dilemma about the future)

(P) A lung cancer patient asked, 'What's more deadly Cancer or Corona? When will it get in control?'

(C) Caregiver expressed their concern, 'I have no idea whether the situation will improve or worsen with time?'

Apart from these responses, two of the patients

reported that they had received a phone call from a private Cancer Hospital and there was no delay in their scheduled chemotherapy session. "My treatment went smoothly, and the hospital had taken screening as well as proper safety measures." "Our medical records were sanitized and the premises were disinfected," said a caregiver.

Key themes that emerged in the study are health care needs and availability, fear of infection, social & financial challenges,work-life imbalance, lifestyle disruption,difficulty in adapting to covid protocols,strategies of management, and fear of uncertainty.

Figure 1. Themes from the Interview participant's responses (N=18)

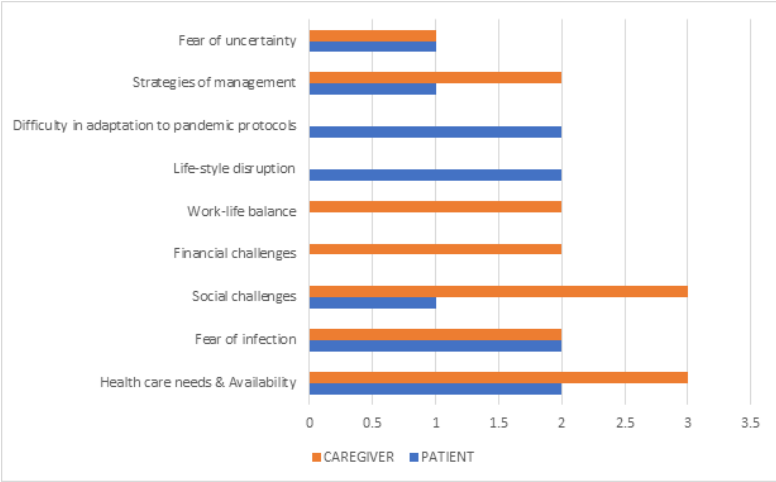

Figure 1: Represents nine key themesthat emerged in the study (comparing the verbal quotes from cancer patients and caregivers).

Discussion

The present study provided valuable insight into patients' and caregivers' perspectives on dealing with the dual challenges of cancer and corona. Healthcare needs, availability, and lack of social support are the most commonly reported symptoms by 6 cancer patients and their caregivers (33.3%). Difficulties in transport, procurement of medicines, and delays in treatment are the main difficulties reported by 10 caregivers, most of whom are located in remote or rural areas (55%). On the other hand, 6 patients reported having symptoms of pain and fatigue (33%), 2 patients reported disruption in lifestyle (11%), as well as difficulties adhering to COVID protocols (11%). Fear of infection, as well as fear of uncertainty, is expressed by 2 cancer patients and 3 caregivers (14%). Lack of social support and loss of an income source is burdensome, creating anxiety and deep worry, majorly reported by 6 caregivers (33%) in the present study.

Research provides supportive evidence that the potential mental health effects of COVID-19 might be associated with the primary effects of epidemic disease outbreaks as well as secondary effects of economic recessions and depression, loneliness, quarantine, and social isolation.[9-11]During the pandemic, the World Health Organization and most governments strongly advised people to stay at home and be safe. As a result, a large proportion of the population who lived alone had mental health concerns during this period. Prolonged periods of domestic confinement can lead to an increased prevalence of post-traumatic stress disorder, loneliness, boredom, and anger during and after quarantine.[12] Research(Matias, Dominski,& Marks, 2020) largely supports and rationalizes human needs in COVID-19 isolation. [13]Williams, Morelli, Ong, & Zaki,2018, describes in their study that being connected with others fulfilled self-affiliation, thus helping people to regulate their emotions, cope with stress and remain resilient.[14] It is evident that during the lockdown, unmet self-protection needs may cause systematic frustration of a deep-seated need to ensure the protection of self and family. It may induce fear, anxiety, and distress, and is also associated with insomnia, irritability,

and aggression. A sense of loss experienced in society due to the loss of direct social contact in multiple forms, such as loved ones, employment, education opportunities, social support, relaxation, and recreation, is reported.[15-16] The present study describes the challenges of having no social support and the psycho-social impact of Corona on cancer patients and their families.

Working in a lockdown phase during a pandemic from home had its challenges, according to research (Kumar, Kumar, Aggarwal, &Yeap, 2021)on COVID-19-induced work stress, job performance, distress, and life satisfaction.[17] Ashforth, Kreiner, & Fugate, 2000 explain in their study thatemployees who worked from home, shared household responsibilities, and switched from one role to another while being distracted by thoughts, emotions, or demands associated with another role be extremely frustrating.[18] According to the responses of the caregivers, this appears to be primarily a concern (Table 1). In the present study, caregivers majorly reported complaints of working from home, facing challenges sharing household responsibilities, family obligations, and work commitments, and missing work-life balance during the lockdown phase of COVID-19. Role overload, family distraction, changes in lifestyle choices, and occupational discomfort were significant predictors of distress during the lockdown. Life satisfaction has been reduced due to a significant increase in distress levels and lowered job performance. Pfefferbaum& North, 2020 reported in their study thatit is important to monitor vulnerability such as pre-existing physical or psychological conditions for medical evaluation, and supportive intervention such as psychoeducation and cognitive behavioral techniques to enhance coping is emphasized.[19]

Conclusion

Research studies suggest that interventions include online psychological support and psychological first-aid, imparting education through Telepsychology. This also explains that interventions based on technological tools and programs to mitigate the effects of the pandemic are the 'new normal. [20]Telemedicine emerging as the new perspective of well-being to address the several psycho-social concerns of patients and caregivers,[21-22] and psychosocial interventions designed to meet the needs of the patients and caregivers need to be focused.[23] Practical approaches such as educating people and creating awareness about the current pandemic situation, creating access to medical care and psychological support, and information from reliable sources are emphasized in the study.

Conflicts of Interest: There are no conflicts reported for the study and the research is not funded by any source.

The study fulfills the ethical guidelines and has taken permission from the parent institution and hospital authorities. Necessary information was provided and informed consent was given to the participants.

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PSYCHOSOCIAL CORRELATES OF SEXUAL HEALTH AMONG CANCER PATIENTS AND THEIR PARTNERS- ROLE OF AN INTERVENTION

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