



Appraisal of Karnofsky Scale in Females with Cancer

Ch. Deekshitha¹, P. Manaswini¹, Juveria Tarannum¹, B. Pratap Reddy²,
A. Shyam Sunder^{3*}

¹ Pharm D, Department of Pharmacy Practice, Balaji Institute of Pharmaceutical Sciences, Narsampet, Warangal, Telangana, India

² Surgical Oncologist, MBBS. MS (General Surgery), Fellowship In Surgical Oncology, St. Ann's Cancer Hospital, Warangal, Telangana, India

³ Head of Department, Department of Pharmacy Practice, Balaji Institute of Pharmaceutical Sciences, Narsampet, Warangal, Telangana, India

ABSTRACT

Aim: Cancer can produce many subtle and non-subtle symptoms. Cancer-related quality of life is associated with all stages and symptoms of cancer. Quality of life is a fundamental study to ensure disease-free survival in cancer patients, as it has effective methods of detection and treatment in long-term survivors. **Objective:** The objective of the research was to assess the quality of life of females with the past history of cancer by utilizing the Karnofsky Performance Scale. **Methods:** All the female patients who attended the hospital with cancer history were studied by asking questions directly to patients, and patient caregivers via phone calling by the standard Karnofsky 11 Points Questionnaire. **Results:** Quality of life of the patients who underwent Surgery + RT+ CT, RT+ CT is having more 100% performance, followed by other performance grades. The quality of life of patients who underwent CT is having more 0% performance more, followed by other performance grading. The quality of life of patients who underwent RT had performance scale of 70%, followed by other performance grades. **Conclusion:** Cancer patients in stable conditions with psychosocial support can have a good quality of life with the treatment given. Families living with women with cancer in rural areas are having a vulnerable life, and need emergency psychosocial support. The patient caregivers and the clinicians need to invest sufficient time to improve the quality of life.

Key Words: Cancer, Chemotherapy, Karnofsky Performance Scale, Quality of Life, Radiation Therapy, Surgery.

eIJPPR 2019; 9(5):1-7

HOW TO CITE THIS ARTICLE: Deekshitha, Ch., Manaswini, P., Tarannum, J, Pratap Reddy, B., Raj Kumar, G., Shyam Sunder, A. (2019). Appraisal of karnofsky scale in females with cancer, Int. j. pharm. phytopharm. Res., 9(5), pp.1-7.

INTRODUCTION

Quality of Life Assessment

Quality of life (QOL) is an individual's understanding of her/his situation in life in the context of the culture and value systems in which she/he lives and in association with her/his objectives, expectations, standards, and concerns. [1] Today, experts are increasingly faced with conditions where patients may not gain benefits regarding of disease-free survival. However, it is likely to see significant modifications in health-related quality of life (HRQOL). [2] HRQOL comprises of the subjective

understanding of the positive and negative perspectives of cancer patients' symptoms, including physical, emotional, social, and cognitive functions and disease symptoms and side effects of the therapy. [3] Now, the U.S. Food and Drug Administration recognizes the advantages of HRQOL as a fundamental for approval of novel anticancer drugs, and many research groups are now including HRQOL in their oncology investigations. [4-6] Majority of researchers stated that when measuring quality of life, it is essential to focus very clearly on specific patient domains, rather than just wider questions, i.e., how is your Health? Most of physician's assessment

Corresponding author: A. Shyam Sunder

Address: Head of Department, Department of Pharmacy Practice, Balaji Institute of Pharmaceutical Sciences, Narsampet, Warangal, Telangana, India

E-mail: ✉ juveria5496@gmail.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 22 March 2019; **Revised:** 13 September 2019; **Accepted:** 15 September 2019



should be based on patient’s clinical symptoms, related to patients-reported questionnaires for assessment of HRQOL. [7] The cancer specific QOL is associated with all stages of the disease, and assess the overall impact of the patient’s health status on their QOL. [8] The main issue of long-term cancer survivors are social/emotional support, health habits, spiritual/philosophical aspect of life and body image, and psychosocial issues and physical symptoms such as pain and the influence of these two items upon patient’s vitality. [9-11]

The Karnofsky Performance Status (KPS) is a widely utilized technique to assess the functional status of a patient. It was introduced by Karnofsky and Burchenal in 1949 in an article originally published as a chapter of the book **Evaluation of Chemotherapeutic Agents**. The ECOG Performance status (ECOG PS), an alternative status evaluation was derived from KPS. [12] The KPS has itself established as a decision aid with relevance regardless of whether a patient receives either tumour-specific or mere symptomatic therapy. Karnofsky introduced the Performance Status explaining the patient’s potential to perform his normal activity and

work, or his reliance on constant medical care to be alive, and identifies the prognosis of the patient or his burden to his family. The percentages of KPS are described in three states: A (100-80%), B (70-50%), and C (40-0%). These states explain different levels of performance, functionality, and performance of patient. [12] The KPS is an attempt to try and determine the more “subjective” aspect of the outcome of cancer therapy (Table 1). The KPS, because of its eleven-stage classification is more accurate than ECOG. KPS also plays a key role in treatment modality decisions. KPS explains the patient’s potential to carry on normal activity and work, or his need for specific amount of custodial care. [12] The QOL issues are of interest in oncology because efficient modern techniques of treatment and detection have resulted in an improvement in the number of long-term survivors. [13] The aim of the present study was to determine epidemiological prevalence rate in female cancer patients, and to assess QOL of patients who have undergone surgery, chemotherapy, and radiation therapy by Karnofsky Performance Index.

Table 1. Karnofsky Performance Scale.

Condition	Percentage	Comments
Able to perform normal activity and work, no special care required	100	No complaints, no evidence of illness.
	90	Capable of performing normal activity, minor signs of illness.
	80	Normal activity with effort, some signs of illness.
Unable to work, able to live at home and care for most personal requirements, differing amounts of assistance required	70	Cares for self, unable to perform a normal activity or be active.
	60	Requires infrequent assistance, but is capable of caring for most personal requirements.
	50	Assistance and frequent medical care.
Not able to care for self, needs equivalent of institutional or hospital care, the disease may progress rapidly	40	Disabled, needs special care and.
	30	Severely disabled, hospital admission indicated although death was not imminent.
	20	Very sick, hospital admission required; active supportive treatment essential.
	10	Moribund, fatal procedure progressing rapidly.
	0	Dead

METHODOLOGY

This longitudinal-retrospective study was conducted at Cancer Hospital, Kazipet, Warangal district for 6 months (March 2018-August 2018) among female cancer patients. The inclusion criterion was female cancer

patients of age above 20 years. The exclusion criteria included lactating and pregnant women, as well as women with age below 20 years. The study population was classified based on involved patients’ quality of life determined by KPS. The data was entered in the MS excel



database, and Statistical analysis was performed using QlikView Analytics software.

RESULTS

Table 2. Quality of life of patients who underwent surgery+ RT+ CT.

Grading by KPS for patients underwent surgery+ RT+ CT	Quality of life for patients underwent surgery+ RT+ CT
0%	9
10%	0
20%	2
30%	3
40%	1
50%	4
60%	6
70%	6
80%	39
90%	46
100%	93
Total	209

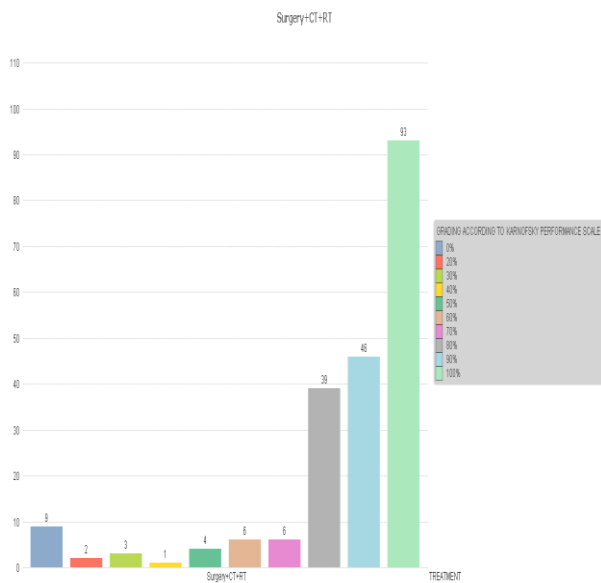


Figure 1. The X-axis represents grading by KPS for surgery+ RT+ CT, Y-axis represents the quality of life proportion of each grade.

Table 3. Quality of life for patients who underwent CT.

Grading by KPS for CT patients	Quality of life for CT patients
0%	12
10%	1
20%	9

30%	6
40%	4
50%	1
60%	1
70%	6
80%	6
90%	5
100%	5
Total	56

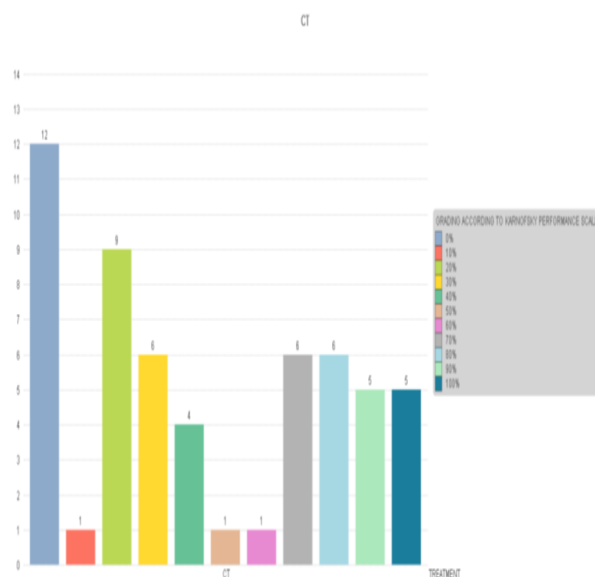


Figure 2. Quality of life for patients underwent CT; X-axis represents grading of the quality of life by KPS for patients underwent CT, and y-axis represents the number of people on that particular grading.

Table 4. The quality of life of patients who underwent only RT+ CT treatment.

Grading by KPS for RT+ CT patients	Quality of life for RT+ CT patients proportion of each grading of KPS
0%	4
10%	0
20%	1
30%	1
40%	3
50%	1
60%	1
70%	2
80%	5
90%	2
100%	16
Total	36

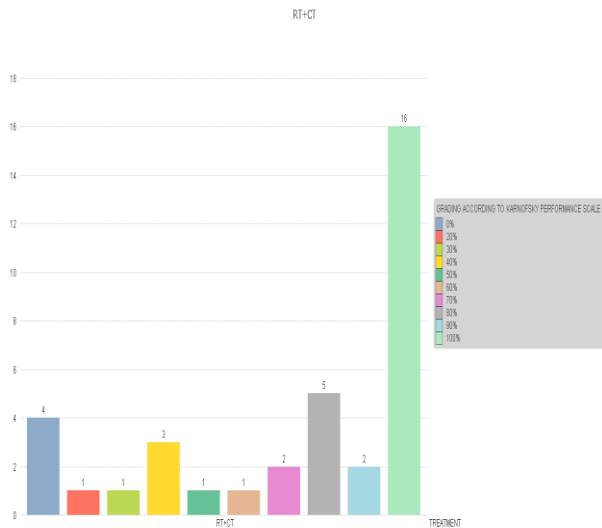


Figure 3. The quality of life of patients who underwent only RT+ CT treatment; X-axis represents grading of KPS, and Y-axis represents the number of patients on each grading of KPS.

Table 5. The quality of life of patients only underwent RT.

Grading by KPS for only RT	Quality of life for RT patients
0%	3
30%	1
40%	1
60%	1
70%	4
90%	2
100%	2
Total	14

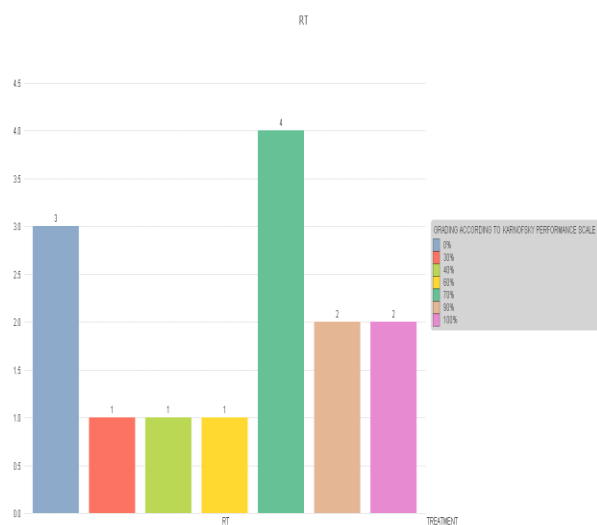


Figure 4. Quality of life of patients only underwent RT; X-axis represents grading of KPS, and Y-axis represents the number of patients on each grading of KPS to determine QOL.

Table 6. Treatment pattern and quality of life for Ca. Breast patients

Type of Cancer	Treatment pattern	Quality of life grading & no of patients
Carcinoma of Breast (121)	Surgery+ CT+ RT	0% - 1 40%-1 50%- 2 60%-1 70%- 1 80%- 17 90%- 29 100%- 46
	CT(19)	0% - 4 30%- 1 40%- 2 70%- 4 80%-2 90%- 3 100%- 3
	RT(4)	0% - 2 70%- 2

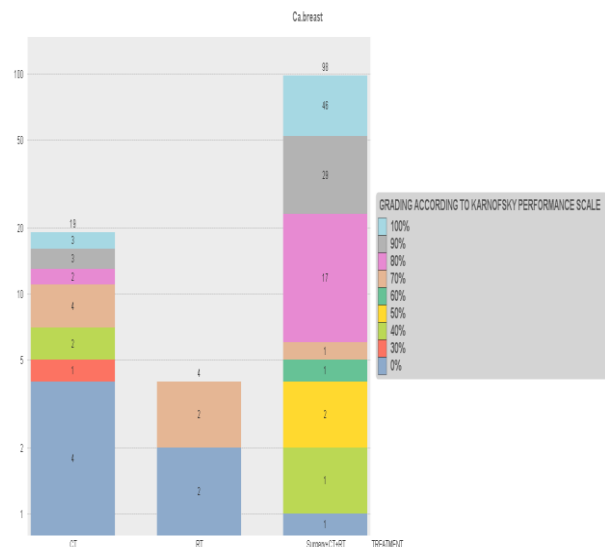


Figure 5. Treatment pattern and quality of life for Ca. Breast patients; X-axis represents treatment pattern for Ca. Breast patients, Y-axis represents the quality of life grading by KPS for Ca. Breast patients.

Table 7. Quality of life and treatment pattern for Ca. Cervix patients.

Type of Cancer	Treatment pattern	Quality of life & no. Of patients
Carcinoma Cervix (139)	Surgery+ CT+ RT (93)	0%- 6, 20%- 2, 50%-2, 60%- 3, 70%- 4, 80%- 19, 90%- 17, 100%- 40
	CT (2)	70%- 1, 80%- 1
	RT+ CT (33)	0%- 4, 20%- 1, 30%- 1, 40%- 3, 50%-1, 60%- 1, 70%- 2, 80%- 5, 90%- 1, 100%- 14
	RT (8)	0%- 1, 30%- 1, 40%- 1, 60%-1, 70%- 1, 90%-1, 100%- 2
	Palliative RT (2)	20%- 1, 90%- 1
	HDR (1)	30%- 1

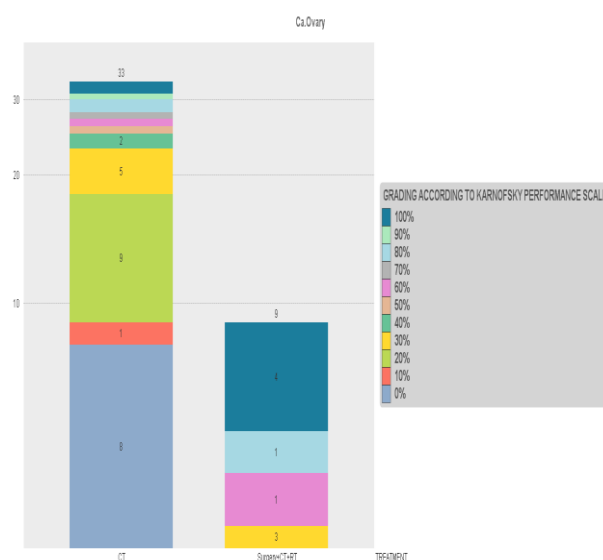


Figure 7. Quality of life and treatment pattern for Ca. Ovary patients, X-axis represents treatment pattern, Y-axis represents the quality of life by grading by KPS.

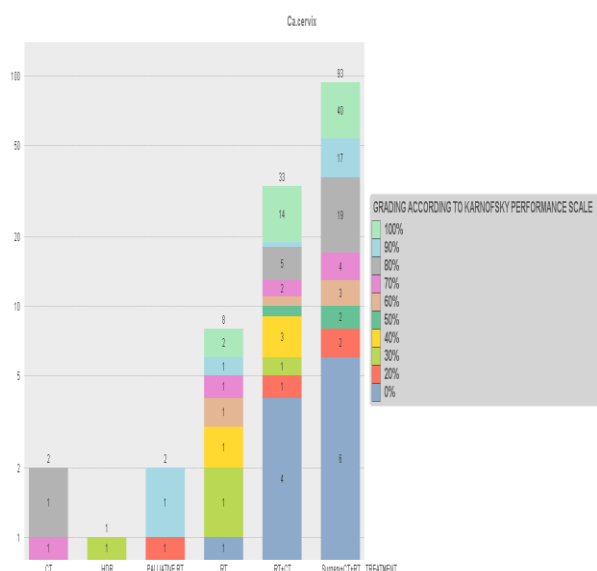


Figure 6. Quality of life and treatment pattern for Ca. Cervix patients; X-axis represents treatment pattern for Ca. Cervix, Y-axis represents the quality of life by KPS.

Table 8. The quality of life and treatment pattern for Ca. Ovary patients.

Type of cancer	Treatment pattern	Quality of life and no of patients
Carcinoma of breast	Surgery+ CT+ RT(9)	30%-4, 60%-1, 80%-1, 100%-4
	CT(33)	0%-8, 10%-1, 20%-9, 30%-5, 40%-2, 50%-1, 60%-1, 70%-1, 80%-2, 90%-1, 100%-2

Quality of life assessment revealed that the patient who underwent surgery + RT+ CT are in more proportion, followed by CT, and RT+ CT, RT. Grading of patients according to KPS indicated that patients who are under 100% are more in number, followed by 90%, 80%, 0%, 70%, 20%, 30%, 60%, 40%, 50%, and 10%. Besides, patients who underwent RT+ CT had more 100% performance, followed by other performance grades. Quality of life of patients who underwent CT had more 0% performance, followed by other performance gradings. Quality of life of patients who underwent RT had a performance scale of 70%, followed by other performance gradings.

CONCLUSION

In justification with Abdel W Awadalla *et al.*, QOL of cancer patients created an evidence base for the country's cancer care program, to improve national health knowledge about prognosis in cancer. Families living with female cancer patients are vulnerable and need support. The KPS allows for the classification of patients whose clinical conditions are often highly complicated. The indication of QOL is that patients living with gynecological cancers that are less educated, and not formally employed, need attention in the clinical setting. In particular, the impression of QOL of the patient and caregivers reveals the clinician's need to invest in educating and supporting family caregivers to improve their role in the health care system. With multiple barriers to its assessment, HRQOL helps in subjective experiences on cancer therapy and helps in the assessment of primary or secondary endpoints with QOL. QOL also as an early indicator of disease progression could help the physician

in daily practice to closely monitor patient's illness and treatment given, which may get modified with functional stress, impairments or perceptions. Optimal health-related QOL may reduce mortality which is the main objective of medical care.

Conflicts of Interest: The authors declare no conflict of interest.

Financial Disclosure of Funding: This study is not funded by any governmental or private body.

Abbreviations

HRQOL- Health Related Quality of Life

QOL- Quality of Life

KPS- Karnofsky Performance Scale

ECOG PS- Eastern Cooperative Oncology Group Performance Status

ECOG- Eastern Cooperative Oncology Group

HDR- High Dose Radiations

CT- Chemotherapy

RT- Radiation therapy.

INSTITUTIONAL HUMAN ETHICS COMMITTEE

BALAJI INSTITUTE OF PHARMACEUTICAL SCIENCES,
Laknepally, Narsampet, Warangal Rural-506331, Telangana State



BIPS
NARSAMPET
Estd: 2005

Approval Number-BIPS/IEC/2018/P1

CERTIFICATE

The Institutional Ethics Committee (IEC) meeting held on 03-03-2018 and has approved the research protocol entitled "ELUCIDATIVE EPIDEMIOLOGICAL STUDY IN FEMALE CANCER PATIENTS" including APPRAISAL OF KARNOFSKY PERFORMANCE SCALE IN FEMALE CANCER'S by Juveria Tarannum, P. Manaswini, Ch. Deekshitha under the guidance of **Dr. B. Pratap Reddy, Dr. G. Rajkumar** during March 2018 to Aug 2018 for Doctor of Pharmacy.

Chairman of IEC

REFERENCES

- [1] Awadalla AW, Ohaeri JU, Gholoum A, Khalid AO, Hamad HM, Jacob A. Factors associated with quality of life of outpatients with breast cancer and gynecologic cancers and their family caregivers: a controlled study. *BMC Cancer*. 2007; 7:102.
- [2] Velikova G, Stark D, Selby P. Quality of life instruments in oncology. *European Journal of Cancer*. 1999; 35: 1571-1580.
- [3] Leplege A, Hunt S. The problem of quality of life in medicine. *JAMA*. 1997; 278: 47-50.
- [4] Detmar SB, Aaronson NK. Quality of life assessment in daily clinical oncology practice: a feasibility study. *European Journal of Cancer*. 1998; 34: 1181-1186.
- [5] Field R. Endpoints in cancer clinical trials: is there a need for measuring quality of life? *Support Care Cancer*. 1995; 3: 23-27.
- [6] Muldoon MF, Barger SD, Flory JD, Manuck SB. What are quality of life measurements measuring? *BMJ*. 1998; 316: 542-545.
- [7] Bottomley A. The cancer patient and quality of life. *Oncologist*. 2002; 7: 120-125.
- [8] Hornquist JO. Quality of life: concept and assessment. *Scandinavian Journal of Science & Medicine*. 1989; 18: 67-79.
- [9] Casso D, Buist DS, Taplin S. Quality of life of 5-10 year breast cancer survivors diagnosed between age 40 and 49. *Health Qual Life Outcomes*. 2004; 2: 25.
- [10] Ganz PA, Desmond KA, Leedham B, Rowland JH, Meyetowitz BE, Belin TR. Quality of life in

- long term disease- free survivors of breast cancer: a follow- up study. Journal of the National Cancer Institute. 2002; 94: 39-49.
- [11] Hydernajed MS, Hassanpur Dekhordi A, Solati Dekhordi K. Factors affecting quality of life in cancer patients undergoing chemotherapy. African Health Sciences. 2011; 11(2): 266- 270.
- [12] Peus D, Newcomb N, Hofer S. Appraisal of the Karnofsky Performance Status and proposal of a simple algorithmic system for its evaluation. BMC Medical Informatics & Decision Making. 2013; 13: 72.
- [13] Penson RT, Wenzel LB, Vergote I, Cella D. Quality of life consideration in gynaecologic cancer. International Journal of Gynecology & Obstetrics. 2006; 95(1): S247- 257.