International Journal of Medicine Research
ISSN: 2455-7404
www.medicinesjournal.com
Volume 3; Issue 2; April 2018; Page No. 118-123

Analysis of relationship between emotional intelligence and quality of life in oncology patients

Dr. Arpitha S Rao*, Dr. Ashwin M Shah
Department(s) and institution(s), Consultants, Department of Radiation of Oncology, Kamineni Academy of Medical Sciences, Hyderabad, Telangana, India

Abstract
Context: Emotional intelligence is the ability to control negative emotions. Psychological wellbeing is an important component of quality of life. There are very few studies analysing the association of emotional intelligence and quality of life in oncology patients.
Aims: To analyse the emotional intelligence of the patients, analyse their quality of life and explore if there is any relationship between the them.
Settings and Design: This was a cross sectional study conducted in Kamineni Academy of Medical Sciences and Research Centre. A total of 105 oncology patients were recruited for the study between January 2018 and March 2018.
Methods and Material: For analysing the emotional intelligence, the abridged version of Bar-On EQ inventory was used. EORTC QLQ C30 quality of life questionnaire was used to analyse the quality of life.
Statistical analysis used: Multiple regression was conducted to find out the impact of Emotional Intelligence on different variables of Quality of life
Results: Emotional intelligence was higher with advancing age. Analysis clearly showed that patients with higher emotional intelligence had better emotional, social functioning and quality of life.
Conclusions: Cancer is a devastating diagnosis with both physical and psychological distress. For the patients to fare through the diagnosis and management well, Emotional intelligence is an important aspect affecting the quality of life.

Keywords: cancer, emotional intelligence, quality of life

Introduction

Oncology patients go through a lot of emotional, psychological stress that affects their quality of life. It is very well known that many of them experience anxiety and depression. Emotional intelligence is the ability to be aware of, control, and express one's emotions. Theoretically patients with high Emotional intelligence should be able to regulate and react to stressful condition of being diagnosed and treated for cancer better, which should result in higher quality of life. There are very few studies analysing the association of emotional intelligence and quality of life in oncology patients.

The aim of treatment apart from cure in cancer patients is to give a good quality of life to them. Emotional intelligence can be an important dimension in psycho-oncology affecting the quality of life. Hence this study was done to analyse the emotional intelligence of the patients, analyse their quality of life and explore if there is any relationship between the them.

Subjects and Methods

This was a cross sectional study conducted in Kamineni Academy of Medical Sciences and research Centre. A total of 105 oncology patients were recruited for the study between January 2018 and March 2018. A detailed informed consent of the patients was taken before enrolling them for the study. Eligibility criteria consisted of being 18 or older and were all receiving treatment in the institute.

For analysing the emotional intelligence, the Bar-On EQ inventory was used [1]. The 5 broad dimensions of emotional intelligence (EI) and its subscales as described by Bar-On [2] are:

Intra- Personal Skills: Self-regard, Emotional self-awareness, Assertiveness, Independence, Self –actualisation
Inter-Personal Skills: Empathy, Social responsibilities, Interpersonal relationships
Stress Management: Stress tolerance, Impulse control
Adaptability: Problem solving, Reality testing, Flexibility
General Mood: Happiness and Optimism.

The original Bar-on inventory consisted of 133 questions. A small pilot study was conducted by administering this questionnaire to 20 patients to assess their response. In the pilot study it was felt that a lengthy questionnaire adversely affected the response rate as the educational level of the patients in the study was low. Hence, a modified questionnaire consisting of 20 items was created to cover all the aspects of emotional intelligence namely intrapersonal skills, Interpersonal or social skills, Stress management, Adaptability and General mood.

Both the questionnaires were then administered to the sample of 20 patients. EI scores were compared. Paired t test was used to find out if there was any statistically significant difference between the scores from the two questionnaires. Since there

was no significant difference between the two, this validated abridged version of questionnaire was used for the study.

Emotional intelligence (EI) was measured using Likert scale (1-4) where 1 stands lowest response for the item & 4 for the highest in each question. The maximum EI score the patient can obtain in the study was 100 & minimum was 20. Patients were classified under 4 EI groups i.e. less than 40 low EI, 40-60 average EI, 60-80 High EI and above 80 very high EI.

Quality of life is an overall assessment of total wellbeing and includes physical, psychological and social wellbeing. It is sometimes referred to as a patient reported outcome. EORTC QLQ_C30 (European Organisation for research and treatment of cancer) quality of life questionnaire (version 3) consisting of 30 questions was used to collect data on quality of life [3]

Both the questionnaires (in local language) were explained to the patient and they were asked to fill the forms. For illiterate patients, the questions were read out and they were asked to answer orally which was then documented. Only 96 patients were later included for analysis as 9 questionnaires were incomplete.

The results were then analysed using SPSS 16th version.

Results

The analysis revealed the following. The sample consisted of 52 males & 44 females. Most of the patients belonged to 40 to 60 years age group. 21% belonged to less than 40 years age group & 29% belonged to more than 60 years. Most of the patients belonged to low socio-economic status and were from rural area (52%). Most patients were on both radiation & chemo therapy (60%) treatment.

The Emotional intelligence (EI) of the patients was analysed. The mean EI obtained in the study for was 80.77. The distribution of patients based on EI scores can be found below in table 1 and the mean scores of different components of EI and total score is shown in table 2.

Table 1

EI Groups	Average EI Score(<60)	High EI (Score 60-80)	Very High EI(Score>80)
Number of Patients	21	20	56

Table 2

EI Components	Mean	Standard Deviation
Intra Personal	15.5	3.86
Inter Personal	15.43	3.96
Stress Management	16	3.48
Adaptability	16.31	3.29
General Mood	17.53	2.53
Total EI	80.77	13.94

Tests were conducted to determine if there was an impact of demographic variables like age and gender on EI. ANOVA was used to test the impact of age groups on EI and t-test was used to find the impact of gender on EI. The findings have been reported below.

Analysis of Impact of Age on EI

The patients were classified into three groups as shown below.

Table 3: Table showing mean EI in different age groups

Age Groups	Number	Mean EI	Std. Deviation
Less than 40 years	20	79.95	14.321
40- 60 Years	48	76.96	14.463
Greater than 60 years	28	87.89	9.829
Total	96	80.77	13.943

Table 4: ANOVA Age groups vs EI

EI	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2131.413	2	1065.707	6.066	.003
Within Groups	16337.545	93	175.673		
Total	18468.958	95			

The significance obtained from the tests is 0.003 which indicates that age group as a significant impact on EI and from the analysis it was found that patients with age greater than 60 years reported higher EI.

Analysis of Impact of Gender on EI

The patients were into two groups based on gender as shown below

Table 5: Descriptive Gender

Group Statistics					
	Age	Number	Mean EI	Std. Deviation	Std. Error Mean
EI	Males	20	79.95	14.321	3.202
	Females	48	76.96	14.463	2.088

Table 6: T-test Gender vs EI

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EI	Equal variances assumed	.380	.540	.779	66	.439	2.992	3.839	-4.672	10.656
	Equal variances not assumed			.783	35.955	.439	2.992	3.823	-4.762	10.745

The analysis showed that although males had higher EI in comparison to females however this was found to be statistically insignificant.

The Quality of life amongst the patients was analysed based on the EORTC QLQ-C 30 questionnaire and the scoring was done based on the scoring manual [4]. The QLQ_C30 is composed of 5 functional scales (i.e. physical, role, emotional, cognitive and social), symptom scale and a global health status/Quality of life(Qol) scale. All the scales have scores 0 to 100. A high score for a functional scale and global health

status/Qol represents a high/healthy level of functioning and high Qol. While a high score on symptom scale represents a high level of symptomatology or problems. Hence, these scores cannot be added to get a total score. The mean scores for different scores are as shown below in table 7.

Table 7

Overall Quality of life	Mean	Standard Deviation
Global Health Status/Quality of Life	53.47	16.73
Functional Scales		
Physical Functioning	83	12.86
Role Functioning	93.75	16.62
Emotional Functioning	73.26	26.48
Cognitive Functioning	91.67	13.67
Social Functioning	88.19	23.9
Symptom Scale	16.98	12.2

Multiple regression was conducted to find out the impact of Emotional Intelligence on emotional functioning, social functioning and Global health status/ Quality of life, only as it was felt EI didn't have an impact on rest of the variables. The analysis proved that EI had a significant impact on all the three. The p values have been represented in the table below. The Table 8 and 9 represent impact of EI on emotional functioning.

Table 8

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1544.549	1	1544.549	8.579	.004[a]
	Residual	16924.409	94	180.047		
	Total	18468.958	95			

a. Predictors: (Constant), EFScore
b. Dependent Variable: EIScore

Table 9

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	117.638	15.372		.000
	EIScore	-.549	.188	-.289	.004

a. Dependent Variable: EFScore

The analysis clearly proved that higher the emotional intelligence better is the Emotional Functioning. From the regression it was found that for every 10-point increase in EI Emotional functioning of individuals improved by 2.79.
The Table 10 and 11 represent impact of EI on social functioning.

Table 10

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4542.786	1	4542.786	8.565	.004[a]
	Residual	49855.366	94	530.376		
	Total	54398.151	95			

a. Predictors: (Constant), EIScore
b. Dependent Variable: SFScore

Table 11

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	128.253	13.888		.000
	EIScore	-.496	.169	-.289	.004

a. Dependent Variable: SFScore

The analysis clearly proved that higher the emotional intelligence better is the social functioning. From the regression it was found that for every 10-point increase in EI Social function of individuals improved by 2.36.
The Table 12 & 13 represents impact on Global health status/quality of life.

Table 12

ANOVA[b]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	1785.844	1	1785.844	6.760	.011[a]
	Residual	24834.526	94	264.197		
	Total	26620.370	95			

a. Predictors: (Constant), EIScore,
b. Dependent Variable: GHSScore

Table 13

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**Sig.**
		B	**Std. Error**	**Beta**	
1	(Constant)	28.356	9.802		.005
	EI Score	.311	.120	.259	.011

Dependent Variable: GHSScore

The analysis clearly proved that higher the emotional intelligence better is the quality of life. From the regression it was found that for every 10-point increase in EI, the global health status/ quality of life improved by 2.89.

Multiple regression was conducted to find out the impact of different components of EI (Intrapersonal skills, interpersonal skills, stress management, adaptability & general mood) on Quality of life, emotional functioning & social functioning.

Table 14 & 15 represents the analysis of different components of EI on quality of life.

Table 14

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7218.255	5	1443.651	6.697	.004[a]
	Residual	19402.115	90	215.579		
	Total	26620.370	95			

a. Predictors: (Constant), General Mood Score, Intra Personal Score, Inter Personal Score, Adaptability Score, Stress Management Score
b. Dependent Variable: GHS Score

Table 15

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**Sig.**
		B	**Std. Error**	**Beta**	
1	(Constant)	14.790	12.616		.244
	Intra Personal Score	.756	.552	.175	.174
	Inter Personal Score	.796	1.057	.121	.453
	Stress Management Score	5.279	1.082	1.141	.002
	Adaptability Score	-.764	1.300	-.105	.558
	General Mood Score	-3.761	.874	-.958	.025

a. Dependent Variable: GHSScore

The analysis found that patients with better stress management & who had better control over there moods reported higher quality of life than those with lower scores on the two components. (Stress management – p value of.002 and general Mood – p value of.025)

The table 16 & 17 represents the analysis of different components of EI on Emotional Functioning

Table 16

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11914.421	5	2382.884	3.918	.003[a]
	Residual	54740.671	90	608.230		
	Total	66655.091	95			

a. Predictors: (Constant), General Mood Score, Intra Personal Score, Inter Personal Score, Adaptability Score, Stress Management Score
Dependent Variable: EFScore

Table 17

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	93.778	21.191		.000
	Intrapersonal Score	-.853	.927	-.124	.004
	Interpersonal Score	3.291	1.775	.315	.067
	Stress Management Score	-2.533	1.817	-.346	.167
	Adaptability Score	-1.087	2.183	-.094	.620
	General Mood Score	-.458	1.467	-.074	.756

It was found that patients who have better intrapersonal skills had higher emotional functioning. (p value.004)

The table 18 and 19 represents the analysis of different components of EI on social functioning. In the case of social functioning it was found that interpersonal skills, stress management & general mood has a significant impact as shown below.

1. Interpersonal skills – p value: 0.022
2. Stress management – p value: 0.011
3. General Mood – p value: 0.046

Table 18

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22297.881	5	4459.576	12.503	.000[a]
	Residual	32100.270	90	356.670		
	Total	54398.151	95			

a. Predictors: (Constant), General Mood Score, Intra Personal Score, Inter Personal Score, Adaptability Score, Stress Management Score

b. Dependent Variable: SFScore

Table 19

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	149.916	16.228		.000
	IntraPersonal Score	-2.008	.709	-.324	.976
	InterPersonal Score	.621	1.359	.066	.022
	StressManagement Score	-8.604	1.392	-1.300	.011
	Adaptability Score	-.422	1.672	-.041	.801
	GeneralMood Score	6.581	1.124	1.173	.046

a. Dependent Variable: SFScore

The analysis showed that patients with better interpersonal & stress management skills were better social functioning.

Discussion

In the current era, cancers are the second most common cause of death after cardiovascular events in the world. The morbidity, lack of curative management for many malignancies and the stigmata associated with them (more so in the developing world) add to the psychological burden to the patients and their families. In a study by Gregurek R et.al. it was reported that nearly one third of patients with cancers experience psychiatric disorders in the form of depression, anxiety disorders and adjustment disorders [5]. Hence as the psychological wellbeing of the patients' gets compromised, their capability to cope with the stress of the disease comes down and this further effect the quality of life.

The term 'Emotional Intelligence' was used for the first time in 1985 by Payne [6] in his doctoral thesis entitled "A Study of Emotions: Developing Emotional Intelligence." Salovey and Mayer (1990) [7] proposed the term emotional intelligence and based their work on non-cognitive aspects of intelligence. However, it was Goleman (1995) [8] who popularised the term in his book, "Emotional Intelligence - Why It Can Matter More than IQ. Emotional intelligence is an essential factor affecting psychological well-being this was effectively observed in a study by Nasrin Amirifard *et al.* [9] Emotional intelligence indicates the capability of a person to recognize their own and others' emotions and to put them into practice for a better judgement in a given circumstance. It involves the perception, processing, regulation and management of emotions [10, 11].

In the results analysed from our data, it is evident that emotional intelligence was better with advancing age as most of the patients with good to very good EI were in the older age group. This could probably be explained by a greater social awareness and a better stress management with advancing age as was observed by KH. Ahoei et.al, in their study [12]. A larger section of patients in our study had a high EI (mean-80.77). Our study had predominantly patients from the lower socioeconomic class. So possibly we can state that emotional intelligence need not be essentially affected by the socioeconomic class of the patients though this has not been statistically analysed.

The aim of management of any ailment including cancers would be to give a better quality of life for the patient. The World Health Organization defines quality of life as the person's perception and understanding of his living conditions in terms of culture and values of the society in line with goals, expectations, standards and interests of individuals. In an

attempt to analyse the quality of life of our patients we used the EORTC QLQ_C 30 questionnaire and for the reasons described above, three important aspects of the questionnaire relating to global health status, emotional functioning and social functioning were used for furthering the analysis and final interpretations.

Our results showed that Emotional intelligence is positively associated with many dimensions of quality of life. Higher emotional intelligence is associated with higher emotional and social functioning. As our study reveals, a good emotional functioning was strongly associated with a good intrapersonal management. A good social wellbeing needed good stress management and a good mood in addition to good interpersonal management. All these three factors also strongly correlated with global health status and hence the overall quality of life. And there was also a significant correlation between all the components of emotional intelligence and the overall quality of life.

Patients with higher emotional intelligence can control their negative emotions better which could result in the lower affective response to their experience of undergoing treatment of cancer and lower emotional distress. As the emotional intelligence quotient increases, the capability of fighting with the psychological stresses associated with cancers is enhanced, as was studied by KH. Ahoei et.al.[12] Patients with higher emotional intelligence could probably complete the treatment also without breaks as they can withstand the side effects of treatment better which in turn is a very essential factor for cure. It is not just the EI of the patients but also the care takers, be it in the hospital or at home, that contributes significantly to the overall quality of life of the ailing patients. And for the same reason most of the hospitals have and every hospital should have patient counselling and support units so that each of the essential components of emotional intelligence and particularly intrapersonal skills, stress management and good mood can be ensured in the patients for a better quality of life.

The limitation of this study is the small sample size and heterogenous nature of the sample as it includes all types of cancer patients with variety of treatment regimens. But this study provides an important direction for developing educational, training programs aimed at enhancing emotional intelligence to improve quality of life amongst the patients and care givers.

Conclusion

Cancer is a devastating diagnosis and hence brings a great amount of suffering, both physical and psychological, to the patients. For the patients to fare through the diagnosis and management well, a good Emotional intelligence is an important aspect. This aspect should be incorporated in the training and educational programs of both patients and care takers to improve the quality of life of oncology patients.

References

1. Bar-On R. Bar On Emotional Quotient Inventory. Multi-Health System, 1997.
2. Bar-On R. The Bar-On SI. Psicothema. 2006; 18:13-25.
3. Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez NJ, *et al*. The European Organization for treatment of cancer.QLQ-C30: A quality of life instrument for the use in International Clinical Trials in Oncology. JNCI. 1993; 85:365-376.
4. Fayers PM, Aaronson NK, Bjordal K, Groenvold M, Curran D, Bottomley A. The EORTC Scoring Manual.3rd ed. EORTC BRUSSELS, 2001.
5. Gregurek R, Bras M, Dordevic V, Ratkovic AS,, Brajkovic L. Psychological problems of patients with cancer. Psychiatr Danub. 2010; 22:227-230.
6. Payne WL. A Study of Emotion: Developing Emotional Intelligence; Self Integration; relating to Fear, Pain and Desire. UMI Dissertation Information Services, 2003.
7. Salove P, Mayor JD. Imagination, Cognition and Personality. Emotional Intelligence. 1990; 9:189.
8. Goleman D. Emotional Intelligence, why it can matter more than IQ? Bantham Books, 1995.
9. Amirifard N, Payandeh M, Aeinfar M, Sadeghi M, Sadeghi E, Ghafarpor SA. Survey on the Relationship between Emotional Intelligence and Level of Depression and Anxiety among Women with Breast Cancer. IJHOSCR. 2017; 11:54-57.
10. Baghianimoghadam MH, Afkhamiardakani M. The effect of educational intervention on quality of life among type 2 diabetic patients who referred to Yazd Diabetes Research Center. Horizon of Medical Sciences: Journal of Faculty of Medical Sciences and Health Services of Gonabad. 2007; 13:21-29.
11. Ebrahimi L, Masoumi M, Hojjati AH, Firozjaie A, Abdi M. NeuroQuantology Comparing the Quality of Life and Emotional Intelligence among Patients with Psychosomatic Disease (Type 2 Diabetes) and Healthy Individuals. 2017; 15:12-19.
12. Ahoie KH, Faramarzi M, Hassanzadeh R. Psychological Well-Being of Patients with Breast Cancer and Its Relationship with Emotional Intelligence. J Babol Univ Med Sci. 2017; 19:20-27.