

Self-esteem among cancer patients receiving chemotherapy in selected government state hospitals, Peninsular Malaysia

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ABSTRACT

Introduction: The number of cancer cases in Malaysia has increased from 32,000 cases in 2008 with to 37,000 in 2012 (check figures in text). This number is expected to rise to 56,932 by 2025. Cancer patients undergoing chemotherapy experience low to moderate level of self-esteem.

Objectives: To determine the self-esteem among oncology patients receiving chemotherapy in selected government state hospitals, Peninsular Malaysia.

Methods: A cross-sectional study was conducted using self-administered questionnaires. 953 respondents were given questionnaires which included socio-demographic profile, physical effect, depression, anxiety, quality of life and self esteem. Inferential analysis was done by using Independent T-test or Pearson's Correlation and the level of significance was $p < 0.05$. Multivariate logistic regression was then used to determine the predictors using Statistical Package for Social Sciences software version 22.0

Results: All 953 respondents selected participated in this study. The overall mean self-esteem in this study was 22.67, SD=4.98. The significant predictors of self-esteem where p-value was < 0.05 were age; gender; marital status; working status; anxiety; depression; nausea; anemia; hair loss; skin and nail changes; overall quality of life and psychological domain of quality of life.

The finding of this study indicates that predictors of self-esteem among patients undergoing chemotherapy should be taken into account to improve their quality of life. Guidelines on how to manage self-esteem in a chemotherapy patient can be done using this study as the baseline.

KEY WORDS:

Cancer, Chemotherapy, Self esteem

INTRODUCTION

Cancer is one of the leading causes of mortality in both developed and developing countries and is a major public

health problem in the world today. By 2020 mortality due to cancer is expected to total up to above 11 million people worldwide.¹ It is shown that approximately 14.1 million new cancer cases were reported and 8.2 million deaths due to cancer occurred in 2012.² In Malaysia, death caused by cancer in 2008 was 20,100 and this increased to 21,700 in 2012.³

Cancer is not just a disease that affects the body, it is so terrifying to the extent that it affects a person's confidence in their ability to be in control of their life.⁴ Self-esteem is one of the psychological element which may deteriorate when the patient tries to adapt to the problem, deal with their suffering and take control over incidence that has resulted because of the disease.⁵ The common treatments for cancer are radiation therapy, chemotherapy and surgery.⁶ Many temporary and permanent changes in the physical appearance of a patient may present as a side effect during the treatment process.⁷ Even the easiest daily routine may get disrupted and patients need to be aware of these long-term consequences, which may influence the level of self-esteem.⁸ In chemotherapy ward Fatemiyeh Teaching Hospitals Semnan, there were absolutely no respondents with high self-esteem. Nearly 88.8% of respondents presented with low self-esteem while the rest had moderate self-esteem.¹¹ It is also said that self-esteem of a person may undergo changes under certain circumstances such as diseases.⁸

The definite definition of self-esteem is quite difficult as it is very contextual and it is very subjective depending on situation, events and the given level of knowledge at that time. People with low self-esteem imply self-rejection, self-dissatisfaction, self-contempt, lack self-respect for themselves and wish they were something else. On the other hand, according to Rosenberg, high self-esteem means that they have high self-respect for who they are, but this is also within limits and do not assume that they are in any way more superior than anyone else. The diagnosis of cancer itself has the tendency of affecting the image of the patient about their own bodies negatively resulting in changes in self-esteem. Even the easiest daily routine may be disrupted and patients need to be aware of these long-term consequences, which may influence their level of self-esteem.⁹

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Many studies have shown that patients undergoing chemotherapy present with low to moderate self-esteem.¹¹⁻¹³ In Malaysia, the majority respondent in Hospital Tuanku Jaafar Seremban was seen to have moderate self-esteem.¹⁴

This study aims to determine the self-esteem among cancer patients receiving chemotherapy in selected government hospitals in Malaysia and also to determine their predictors that are involved. The number of cancer sufferings is growing from year to year, and one of the main contributions to this is lack of application of known intervention which is crucial in saving life and eliminating sufferings which may possibly expedite the control of cancer earlier. Cure should not only be based biological but also psychologically. Therefore, the ultimate goal should include in a way that it will lead to increase in self-esteem.¹⁵

MATERIALS AND METHODS

A cross-sectional study was done from February 2015 until December 2017 among cancer patients undergoing chemotherapy treatment in ten selected government state hospitals in Peninsular Malaysia (name the states at least). This study was done in the day care units and oncology wards. The inclusion criteria was cancer patients who were Malaysian citizens undergoing chemotherapy and exclusion criteria were patients who were too ill (for example bed ridden) and unable to respond, hearing and speech difficulties and patients who had any psychotic features.

The self-administered questionnaires which was used in this study were socio-demographic profile, Common Terminology Criteria for Adverse Effects (CTCAE 4), Patient Health Questionnaire (PHQ 9), General Anxiety Disorder (GAD 7), WHOQOL-BREF (WHOQOL-BREF) and Rosenberg Self Esteem Scale. The Rosenberg Self Esteem Scale is a Likert scale format with options from strongly agree to strongly disagree. The number of questions in this questionnaire is 10 with continuous scaling and no cut off scores. These 10 questions measure the positive and negative feelings about themselves. In this study, the continuous scale was not categorised and was interpreted by, the higher the score the better the self-esteem and the lower the score the lower the self-esteem. PHQ 9 and GAD 7 has their own range of score which is categorised into normal, mild, moderate and severe. Respondents falling under the normal category was considered not to have depression and severity while the rest falls under the yes category in table 3. The sample size in this study was 953 and was calculated according to study by Lemeshow, Hosmer, Klar, & Lwanga, 1990 (1990). All 953 patients who were approached agreed to participate and completed the questionnaire correctly with the help of the researcher. Samples were collected on a particular days and month according to the visiting days of patients which varied from hospital to hospital. Data was analysed using SPSS Version 22.0 (Statistical-Package-for-Social-Sciences-Software). Frequency and percentage of variables were obtained through descriptive statistics. Inferential analysis was done by using t-test or Pearson's correlation test to determine the association between variables. The confidence interval was set at 95% and level of significance at <0.05. Multiple logistic regression was used to determine the significant predictors of self-esteem.

RESULTS

This study had 100% respond rate with all 953 respondents participating as shown in table I below.

The overall mean (SD) of self-esteem is seen to be 22.67(4.98). The mean age of respondents in this study was 48.15, SD=14.22 for male and 45.30, SD=12.62 for female.

21 variables as seen in Tables II, III and IV was found to be significantly associated ($p < 0.05$) with self-esteem of patients which were age, gender, marital status, family members living together, education level, working status, income, stage of cancer, chemotherapy cycle, pain due to chemotherapy, anxiety, depression, nausea, vomiting, anemia, hair loss, skin and nail changes, physical health domain, psychological health domain, social relationship domain and overall quality of life.

Further analysis to determine the predictors using the multilinear regression analysis was done. Of a total of 36 variables association table, 30 variables were chosen for multilinear regression analysis based on $p < 0.25$. This multilinear regression analysis was done using the 'enter' method. This analysis found that there were 12 predictors of self-esteem based on p-value < 0.05 as shown in Table V.

DISCUSSION

The overall mean self-esteem score in this study is 22.67 which is a border line value. Another study had a mean self-esteem score of 25.76 which is far from the maximum score among respondents receiving chemotherapy and this was seen in a study done in Turkey.² Meanwhile in Malaysia, another similar study conducted among chemotherapy patients in Seremban was seen to have a baseline self-esteem score of 25.28.⁶

Our study shows that there is significant association between the age of the respondents and the level of self-esteem with $p < 0.001$. It is shown that the older age group has higher self-esteem whereby the mean of the higher age group was 26.24, SD=6.57 compared to the younger age group mean=22.09, SD=4.40. A study done in Brazil among patients undergoing chemotherapy also showed that the level of self-esteem increased with age.⁵ Female patients was seen to have lower self-esteem in our study with a mean=21.15, SD=3.62 compared with the male group mean=24.92, SD=5.78. This finding is supported by a study done in a regional cancer center in Agartala, India, which proves that female patients had a lower level of self-concept compared to male patients.¹⁶ Our study showed a significant association between marital status and the self-esteem outcome and level of self-esteem was found to be higher among the single respondents mean=23.63 as compared to the ones married mean=22.46. This was not seen to be the case in the study by Gomes & Silva in Brazil wherein the majority of the respondents were married and more than half had high self-esteem.¹⁷ It is seen that educated respondents has a higher level of self-esteem (mean=22.84) compared to the uneducated respondents mean=21.47 in our study. Low level of education may possibly cause the discomfort of their body image which in return could end up in avoidance or acceptance and denial. This situation could lead to psychological distress and altered

Table I: Distribution of Respondents (n=953)

Variables	Frequency	Percentage (%)
Age		
<45	329	34.5
45-59	491	51.5
≥60	133	14.0
Total	953	100
Gender		
Male	384	40.3
Female	569	59.7
Total	953	100
Ethnicity		
Malay	491	51.5
Chinese	276	29.0
Indian	145	15.2
Others	41	4.3
Total	953	100
Religion		
Muslim	512	53.7
Buddhist	174	18.3
Hindu	103	10.8
Christian	112	11.8
Others	42	4.4
No Religion	10	1.0
Total	953	100
Marital		
Single	169	17.7
Married	363	38.1
Widowed	274	28.8
Divorced	84	8.8
Separated	63	6.6
Total	953	100
Children		
No Children	228	23.9
1-2	303	31.8
3-4	234	24.6
5-6	150	15.7
>6	38	4.0
Total	953	100
Living together		
None	55	5.8
1-2	261	27.4
3-4	367	38.5
5-6	221	23.2
7-8	44	4.6
>8	5	0.5
Total	953	100
School		
Yes	836	87.7
No	117	12.3
Total	953	100
Highest Education		
Primary	356	37.3
Secondary	204	21.4
University	276	29.0
None	117	12.3
Total	953	100
Working		
Yes	546	57.3
No	187	19.6
Retired	220	23.1
Total	953	100
Income (RM)		
<1500	294	25.8
1501-3000	125	11.0
3001-4500	251	22.0
4501-6000	343	30.1
>6001	127	11.1
Total	953	100

Table II: Association between Self-esteem and Socio-Demographic characteristic, anxiety, depression and self-esteem (n=953) where p-value is obtained using the independent t-test

Variables	Self Esteem (RSES)			
	Mean (SD)	t-test	df	p-value
Age				
≤60	22.09 (4.40)	-9.341	951	0.001**
>60	26.24 (6.57)			
Total				
Gender				
Male	24.92 (5.78)	12.385	951	0.001*
Female	21.15 (3.62)			
Total				
Ethnicity				
Malay	22.75 (5.30)	0.509	951	0.611
Non-Malay	22.40 (4.76)			
Total				
Religion				
Muslim	22.89 (5.13)	1.522	951	0.122
Non-Muslim	22.38 (4.67)			
Total				
Marital Status				
Single	23.63 (6.20)	2.780	951	0.006*
Married	22.46 (4.64)			
Total				
Children				
No children	21.14 (6.05)	-1.839	951	0.066
With children	22.83 (4.57)			
Total				
Family member living together				
Living alone	20.79 (3.52)	-2.912	951	0.004*
Living with someone	22.79 (5.02)			
Total				
Highest Education				
Non Educated	21.47 (3.26)	-2.791	951	0.005*
Educated	22.84 (5.14)			
Total				
Working				
Yes	23.54 (5.46)	6.401	951	0.001**
No	21.50 (3.93)			
Total				
Financial income				
≥1500	21.46 (4.19)	-3.645	951	0.001**
≤1501	22.95 (5.09)			
Total				
Anxiety (GAD7)				
Yes	22.34 (6.55)	7.397	951	0.001**
No	26.81 (4.67)			
Depression (PHQ 9)				
Yes	22.46 (5.47)	2.394	951	0.017*
No	23.40 (2.30)			

p<0.001*
p<0.05**

Table III: Association between Overall Quality of Life, Physical Domain, Psychological Domain, Social Relationship, Environment Domain and Self Esteem (n=953) where p-value is obtained using the Pearson's correlation

Variables	Self-Esteem (RSES)			
	Mean (SD)	r	r ²	p-value
Overall QOL	54.34 (12.01)	0.141	0.019	0.001**
Physical Health	54.62 (11.32)	0.410	0.168	0.001**
Psychological	56.52 (11.01)	0.088	0.008	0.006*
Social Relationship	55.44 (10.36)	-0.435	0.189	0.001**
Environment	55.52 (10.31)	0.060	0.004	0.066

p<0.001*
p<0.05**

Table IV: Association between Physical Effect and Self Esteem (n=953) using the Independent t-test

Variables	Self Esteem (RSES)			
	Mean (SD)	t-test	df	p-value
(Physical Effect CTCAE)				
Nausea				
Yes	21.87 (3.93)	5.916	951	0.001**
No	23.77 (5.95)			
Total				
Vomiting				
Yes	22.38 (4.88)	3.033	951	0.002*
No	23.50 (4.97)			
Total				
Anorexia				
Yes	22.66 (5.11)	0.036	951	0.971
No	22.68 (4.58)			
Total				
Diarrhea				
Yes	22.67 (4.97)	-0.056	951	0.955
No	22.65 (4.97)			
Total				
Constipation				
Yes	22.45 (4.93)	1.894	951	0.058
No	23.08 (5.02)			
Total				
Anemia				
Yes	22.13 (4.55)	7.144	951	0.001**
No	24.99 (5.93)			
Total				
Fever				
Yes	22.50 (5.00)	1.271	951	0.204
No	22.92 (4.92)			
Total				
Fatigue				
Yes	22.54 (4.71)	1.573	951	0.116
No	23.15 (5.80)			
Total				
Infection				
Yes	22.49 (4.79)	1.651	951	0.099
No	23.65 (5.33)			
Total				
Bleeding				
Yes	22.41 (4.78)	1.889	951	0.059
No	23.03 (5.20)			
Total				
Hair Loss				
Yes	22.34 (4.63)	5.761	951	0.001**
No	25.19 (6.56)			
Total				
Mouth, Gum and Throat infection				
Yes	22.57(4.69)	1.037	951	0.300
No	22.95 (5.69)			
Total				
Skin and Nail Changes				
Yes	22.09 (4.67)	5.533	951	0.001**
No	23.99 (5.38)			
Total				

p<0.001*

p<0.05**

Table V: Multilinear regression analysis between Self-Esteem and Predictors of Self-Esteem

Variable	B	SE	t	p-Value	95% C I for B	
					Lower	Upper
Age						
<60	3.567	0.380	9.391	0.001*	2.821	4.312
>60						
Gender						
Female	-2.129	0.274	-7.771	0.001*	-2.667	-1.591
Male						
Marital Status						
Non-Married	-1.969	0.527	-3.736	0.001*	-3.003	-0.934
Married						
Working						
Not working						
Working	-1.243	0.331	-3.754	0.001*	-1.892	-0.593
Anxiety						
Yes						
No	-2.733	0.533	-5.124	0.001*	-3.780	-1.686
Depression						
Yes						
No	-0.882	0.316	-2.794	0.005*	-1.501	-0.262
Nausea						
Yes	-1.038	0.270	-3.839	0.001*	-1.569	-0.507
No						
Anemia						
Yes	-1.539	0.327	-4.711	0.001*	-2.180	-0.898
No						
Hair loss						
Yes	-1.764	0.398	-4.434	0.001*	-2.545	-0.983
No	Ref					
Skin and Nail Changes						
Yes	-1.046	0.277	-3.783	0.001*	-1.589	-0.503
No						
Overall Quality Of Life	-0.104	0.277	0.374	0.008*	-0.647	0.439
Psychological Domain	0.148	0.071	2.087	0.037*	0.009	0.287

B: Unstandardized Coefficients; p significant at p>0.05

Model	R	R Square	Adjusted R Square	Standard Error of the estimation
1	0.659	0.434	0.416	3.796

level of self-esteem.⁹ Respondents who earned less than RM1500 had lower self-esteem mean=21.46 as compared to the ones earning more mean=22.95. This result was also seen in a study done in Brazil where respondents who earned less than RM1500 has lower self-esteem mean=21.46 as compared to the ones earning more, mean=22.95.^{18,19}

Respondents with depression was seen to have lower level of self-esteem mean=22.46 as compared to those in the non-depressive category mean=23.40. This scenario was seen in a study in Korea where self-esteem directly affected the level of depression in chemotherapy patients.⁴ It is proven by the findings in Lo et al. (2010) that those who had low level of self-esteem are at greater risk of depressive symptoms.²⁰ It was also reported that the respondents who were depressed was seen to be higher in the chemotherapy group than the other groups.²¹

The findings of our study states that anxiety and self-esteem of a cancer patient go hand in hand. Anxiety is normally accompanied by sense of disability which lead to decrease in self-esteem.²² Another study done in Hong Kong which has the same outcome wherein the percentage of participants with anxiety in the chemotherapy group was higher than in other groups.²³

The physical effects which was found to have significant association with the level of self-esteem was nausea, vomiting, anemia, hair loss, changes in the skin and nail. Disease and its treatment which is associated with altered appearance have been proved to disrupt a person's self-esteem. Disturbance in body image and appearance is directly linked to low self-esteem.²⁴ Similar concept is shown in our study wherein respondents with altered body image such as alopecia and skin and nail changes has lower self-esteem than the group who did not have changes in their appearance. It is seen in our study that nausea and vomiting

has significant association similar to the findings in a study done in Brazil.²⁵ Treatment induced anemia was also associated with low quality of life in a study done in Italy.²⁶ Many studies have shown to associate low quality of life with low levels of self-esteem similar to the findings of these study whereby anemia has significant association with the level of self-esteem.

The overall domain and all the domains in the quality of life in this study is significantly associated with self-esteem except the environmental domain. In support to this findings, a study done in Detroit underlines the importance in developing and enhancing the self-esteem in cancer patients as it affects their quality of life.²⁷ Study by Kobayashi et al. (2009) claims that patients with high scores of self-esteem also have high score in their quality of life which proved that they are interrelated as seen in this study where self-esteem and overall quality of life is positively associated. Another study done in the Netherlands supports the findings of our study that young adults with cancer was seen to have reported to have low self-esteem and quality of life as compared to their healthy peers.^{1,28} Factors that influences quality of life influence the level of self-esteem.^{10,13} The significant predictors of self-esteem were age, gender, marital status, working, anxiety, depression, nausea, anemia, hair loss, skin and nail changes, overall quality of life and psychological domain of quality of life. In support to these findings, Bartoces et al. (2009) underlines the importance in developing and enhancing the self-esteem in cancer patients as it affects their quality of life.²¹ A study done by Veer et al. (2008) showed young adults with cancer reported a low self-esteem and quality of life as compared to the healthy peers which supports the findings of the present study.

CONCLUSION

The overall mean self-esteem among all respondents in this study was 22.67. 21 variables was found to be significantly associated ($p < 0.05$) with self-esteem of patients which were age, gender, marital status, family members living together, education level, working status, income, stage of cancer, chemotherapy cycle, pain due to chemotherapy, anxiety, depression, nausea, vomiting, anemia, hair loss, skin and nail changes, physical health domain, psychological health domain, social relationship domain and overall quality of life. Further analysis found that there were 12 predictors of self-esteem which were age, gender, marital status, working, anxiety, depression, nausea, anemia, hair loss, skin and nail changes, overall quality of life and psychological domain of quality of life. The findings of this study can serve as a baseline study and provides information on the self-esteem of oncology patients undergoing chemotherapy. As shown in the findings of this study, self-esteem has an impact on cancer patients and there are many predictors which can affect the level of self-esteem. This study highlights that self-esteem deteriorates and should be addressed in cancer patients. By identifying its predictors, steps can be undertaken to improve the self-esteem in patients. In addition to this, the Ministry of Health and also non-government agencies on cancer such as the Malaysian Cancer Society could address self-esteem when promoting

their programs in the community and among cancer patients and care givers.

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