

## RESEARCH ARTICLE

# Observational Study on Patient's Satisfactions and Quality of Life (QoL) Among Cancer Patients Receiving Treatment with Palliative Care Intent in a Tertiary Hospital in Malaysia

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## Abstract

The main objective of palliative treatment for cancer patients has been to maintain, if not improve, the quality of life (QoL). There is a lack of local data on satisfaction and QoL among cancer patients receiving palliative treatment in Malaysia. This study covers patients with incurable, progressive cancer disease receiving palliative treatment in a teaching hospital in Kuala Lumpur, comparing the different components of QoL and correlations with patient satisfaction. A cross-sectional survey using Malay validated SF36 QoL and PSQ-18 (Short Form) tools was carried out between July 2012 - January 2013 with 120 cancer patients receiving palliative treatment, recruited into the study after informed consent using convenient sampling. Results showed that highest satisfaction were observed in Communication Aspect (50.6±9.07) and the least in General Satisfaction (26.4±5.90). The Mental Component Summary (44.9±6.84) scored higher when compared with the Physical Component Summary (42.2±7.91). In this study, we found that patient satisfaction was strongly associated with good quality of life among cancer patients from a general satisfaction aspect ( $r=0.232$ ). A poor significant negative correlation was found in Physical Component (technical quality,  $r=-0.312$ ). The Mental Component showed there was a poor negative correlation between time spent with doctor ( $r=-0.192$ ) and accessibility, ( $r=-0.279$ ). We found that feeling at peace and having a sense of meaning in life were more important to patients than being active or achieving good physical comfort. More study is needed to investigate patients who score poorly on physical and mental component aspects to understand their needs in order to achieve better cancer care.

**Keywords:** Palliative care - terminal cancer - quality of life - patients' satisfaction - PSQ - SF36

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## Introduction

Burden of cancer care is increasing worldwide despite the improvement in modes of cancer treatment and advancement in technology for diagnosing and treating cancers. In addition, cancers are not only causing high morbidity and suffering, but cancers has become a leading cause of death throughout the world (WHO, 2000). In 2002, the number of new cancer diagnoses increased to 10.9 million and the total of 6.7 million people have reportedly died due to the cancer diseases. It is predicted that by the 2020 the rate of cancer will rise by 50 per cent to 15 million cases and, by 2030 the cancer death is estimated to be as high as 13 percent of total death world wide (WHO, 2007).

In Malaysia as well, a similar trend is observed among new cancer cases reported and cancer mortality. In 2003, a total of 21,464 new cases of cancer have been reported

in Peninsular Malaysia (National Cancer Registry, 2003). Majority of these patients are women. Breast cancer were recorded as the highest number of cancer with 3,738 cases, followed by lung cancer 1,758 cases and 1,557 cases of cervical cancer (National Cancer Registry, 2003).

The morbidity as well as mortality of cancer depends upon the severity of cancer that in turn is measured by the 'stage' of cancer. The different stages of cancer is underreported in Malaysia due to various reasons, mainly due to the comprehensiveness and accuracy of the documentation and data collected. Therefore it would be difficult to ascertain the incidence of advanced stage cancer among local population and the subsequent morbidity burden. For most patients with advanced stage of cancer or inability to stand treatment due to poor performance status or high co-morbidities, treatment options are often limited (Hench et al., 2007). Most of the time, the cancer treatment aims to control symptoms and

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maintain some reasonable quality of life for the patients. Treatment with non curative intent may consist many modalities including surgery, chemotherapy, radiotherapy and palliative care.

Palliative care aimed at controlling physical symptoms and psychosocial aspects of patients' illness as well as achieving good quality of patients' life (WHO, 2013). Often it goes concurrently with other treatment modalities in order to achieve good symptoms control. Studies have shown that palliative chemotherapy may play a significant role in improving cancer patient's quality of life (QoL) or prolonging good QoL for reasonable time with advanced cancers (Simmonds, 2000). At the same time, the surgical intervention for spinal metastases and pathological fractures have also proved to improve patients' pain and bring positive impact on overall quality of life to patients with advanced cancer at an acceptable risks (Wai, 2003). Symptoms management are known to be achieved by short course radiotherapy for patients with advanced incurable head and neck cancer (Mohanti et al., 2004). Studies have shown that palliative chemotherapy have played significant role in improving patients with advanced cancer quality of life (QoL) or prolonging good QoL for reasonable time (Simmonds, 2000). Surgical intervention for spinal metastases and pathological fractures also proved to improve patients' pain and bring positive impact on overall quality of life to patients with advanced cancer at an acceptable risks (Glare et al., 2004). Symptoms management are known to be achieved by short course radiotherapy for patients with advanced incurable head and neck cancer (Mohanti et al., 2004). Often it goes concurrently with other treatment modalities in order to achieve good symptoms control.

It is interesting that up to our knowledge, there are no studies that relate patients' satisfaction to their non curative treatment regimes to their quality of life. Davidson (2005) and Fukui (2010) have reported that patients' acceptance to a prescribed treatment has a strong relationship with their satisfaction toward the received care either as inpatient or in the community (Davidson et al., 2005; Fukui et al., 2010). Previous studies showed that satisfaction towards treatment can provide a beneficial effect on patients' mental and physical health status (Miyashita et al., 2008; Wong et al., 2008). Therefore, this study attempts to review satisfaction towards non curative treatments for cancer patients and the relationship with their quality of life.

## Materials and Methods

This is a cross-sectional study from 1<sup>st</sup> June 2012 till 28<sup>th</sup> February 2013 among adult cancer patients (18 years and above) undergoing palliative treatment at a teaching hospita in Kuala Lumpur. Both inpatients as well as out patients were included in the study. The sample size (n=120) was calculated using the sample size of two proportions with an attrition rate of 20%. A total of 120 cancer patients undergoing palliative care treatment were recruited using Convenience sampling method. Data is collected using three (3) different data collection tools, these include: *i*) Patient level data Collection

form for Demographic data; *ii*) Patient Satisfaction Questionnaire version III (PSQ III); and *iii*) Quality Of Life Questionnaire (QoL) using SF-36 version II. This data collectein is supplemented with face to face interviews. Approval for the research was obtained from the the teaching hospitals' Research Ethics Committee.

Questionnaire 'A' collects demographic data that include; age, gender, race, religion, marital status, highest obtained education level, type of cancer, stage of cancer, type of treatment, comorbidities and household income including financial aid received (if any) in MYR. Questionnaire 'B' is the Patient Satisfaction Questionnaire-18, summarized from the Patient Satisfaction Questionnaire version III and it measures the patient satisfaction with palliative treatment received. Questionnaire 'C' uses Quality Of Life Questionnaire (QoL) using SF-36 version II to measures the Quality of Life for patients recieving palliative care.

Quality Of Life Questionnaire (SF-36) version II consists of 36 questions, divided into 8 domains. These domains include; social function, general mental health, role limitations (based on emotional problems and sustainability due to disease), physical functioning, limitations based on their role physical, bodily pain and general health perception. Each domains is further divided into two main composite components, these are composite physical component and mental composite component.

## Results

The response rate of 100% was obtained. This section presents Sociodemographic Characteristics of the patients undergoing palliative care at the hospital. The age within the research ranged from 22-83 years (mean age 57.0 years), and the household income range from MYR1465.00 to MYR4795.00 (median household income MYR 2,890.0). Out of total 120 subjects, 57 (47.5%) were male whereas 63 (52.5%) were female. As per ethnicity; 58 patients (48.3%) were Malay, 53 patients (52.5%) were Chinese, and remaining 9 patients were Indians. Data on the religious believe reveal that 58 patients (48.3%) were Muslim, 46 patients (38.3%) were buddist, 10 patients were chirstians, and 6 patients were Hindu. 92 patients (76.7%) were married, whereas 17 (14.1%), and 11 (10.2%) patients were married and widow respectively. Data on the education status shows that the majority of the patients (55 patients; 45.8%) have secondry education, whereas 40 patients (33.4%) have college/university education, and 25 patients (20.8%) have only primary level education (Table 1).

Data on the type of the cancer shows that the majority of patients (40 patients; 33.4%) receiving palliative treatment has Lung cancer; followed by reast cancer (24 patients; 20.0%), Colon cancer (19 patients; 15.8%), and Prostrate cancer (12 patients; 10.0%). Whereas 25 patients (20.8%) has other miscellaneous cancers. Data on the cancer stage shows that 49.2% patients (59 patients) has stage 4 cancer, followed by stage 3 cancer (53 patients; 44.1%), and only 8 patients (6.7%) has stage 2 cancer. There were no stage 1 cases, as not many cases are referred whilst still in the early stages due to underdetection

**Table 1. Distribution of Sociodemographic Characteristics of Respondents (n=120)**

Variables	Count	%
Gender	Male	57 47.5
	Female	63 52.5
Race	Malay	58 48.3
	Chinese	53 44.2
	Indian	9 7.5
Religion	Islam	58 48.3
	Buddha	46 38.3
	Hindu	6 5.1
	Christian	10 8.3
Marital status	Married	17 14.1
	Single	92 76.7
	Widowed	11 10.2
Level of education	Primary school	25 20.8
	Secondary school	55 45.8
	College/University	40 33.4

**Table 2. Types of Cancer in the Research Sample (n=120)**

Types of Cancers	n	%
Breast Cancer	24	20
Colon Cancer	19	15.8
Prostate Cancer	12	10
Lung Cancer	40	33.4
Others Cancers	25	20.8
Stage of Cancer	2	8 6.7
	3	53 44.1
	4	59 49.2
	Duration cancer diagnosed	2 years and below
	More than 2 years	64 53.3
Treatment types received	Chemotherapy	61 50.8
	Radiotherapy	30 25
	Surgery	18 15
	Symptom Management	11 9.2
Comorbidity other diseases	Hypertension	1 8
	Diabetes	19 15.8
	Heart disease	10 11.1
	More than one Diseases	7 33.3
	None	83 21.8

and poor take up on screenings. As high as 53.3% of the patients (64 patients) have been diagnosed with cancer more than 2 years whereas 46.7% of the patient population (56 patients) were diagnosed cancer within 2 years from the time of the survey. As high as 50.8% of the patients (61 patients) on the palliative treatment were on chemotherapy, followed by radiotherapy (30 patients; 25%) and surgery (18 patients; 15%). Majority of the patients (83 patients; 69.1%) do not have any other diseases recorded besides cancer. Whereas only 19 patients, 10 patients and 1 patient were suffering from Diabetes, Heart problem and Hypertension respectively (Table 2).

Table 3 depicts the distribution of patient satisfaction score measured through PSQ III, based on the seven domains. These seven domains are general satisfaction, technical quality, interpersonal manner, communication, financial aspects, time spent with doctor and accessibility of services provided. The findings found that respondents' communication scores were the highest at 50.60 ( $\pm 9.07$ ), followed by interpersonal quality at 48.48 $\pm 6.18$ .

#### Patients quality of life based on domains

Quality of life among the cancer patients receiving

**Table 3. Respondents Satisfaction Score toward Palliative Treatment Received (n=120)**

PSQ III satisfaction domains	Mean	Standard deviation
Communication Aspects	50.6	9.07
Interpersonal Personality	48.48	6.18
Spend with Doctor	46.25	12.62
Financial Aspects	45.09	4.5
Technical Satisfaction	40.23	9.19
Accessibility	30.13	6.89
General Satisfaction	26.38	5.9

**Table 4. Respondents Quality of Life by Domain**

Domains of quality of life (n=120)	Mean	SD
Role Limitations-Emotional	99.16	9.12
Role Limitations-Physical	77.29	41.5
Physical function	74.91	32.5
General Health Perceptions	63.96	17.41
Social Function	55.93	21.31
General Mental Health Perceptions	52.86	17.8
Energy	52.83	8.39
Bodily Pain	37.02	14.44
Mental Component Composite	44.93	6.84
Physical Component Composite	42.24	7.91

palliative treatment at the hospital is assessed using eight domains. These are Social functioning, General mental health, Role limitations based on Physical Function, Role Limitations based on Emotion, Bodily Pain, General Mental Health Perceptions, Energy, General Health Perceptions and Social Function (Table 4).

The result showed that the quality of life for cancer patients undergoing palliative care based on domain score is highest (99.16 $\pm 9.12$ ) on the domain of Role limitation (emotional). Whereas the domain for bodily pain scored lowest on the quality of life experienced by cancer patients undergoing palliative care (37.02 $\pm 14.44$ ).

The comparison was made between the physical and mental composite components based on the obtained mean and standard deviation. The mental composite score is slightly higher (44.93 $\pm 6.84$ ) as compared to the mean and standard deviation of the physical composite components (42.24 $\pm 7.91$ ).

The relationship between the demographic characteristics i.e. age, gender, religion, education level and household income and the patients satisfaction with the treatment using one way ANOVA and post hoc analysis indicated the significant differences between general satisfaction domains among the different ethnicities (F=4538; p=0.013). Chinese respondents have higher satisfaction scores (28.09) on the general satisfaction towards treatment received. There was a significant difference between marital status and general satisfaction (F=4507 and p=0.050). Mean scores of the respondents who are single have highest general satisfaction (27.77) when undergoing palliative treatment compared to widows, widowers and divorcees who had lower satisfaction (25.25).

There was a significant difference within the general satisfaction scores among the patients with different types of cancer receiving palliative treatment (F=3859; p<0.001). Patient suffering from colon cancer have higher

**Table 5. Relationship between Influencing Factors and Satisfaction Domains**

Ariables	General Satisfaction	Interpersonal	Financial Aspects	Communication	Time Spent with Doctor	Accessibility Quality	Technical
Age <sup>a</sup> (22-83 years) [r (p)]	[0.111 (0.225)]	[0.010 (0.909)]	[-0.111 (0.225)]	[0.118 (0.200)]	[0.164 (0.073)]	[0.289* (<0.001)]	[0.289* (<0.001*)]
Gender <sup>b</sup> [t (p)]	[-1.337 (0.184)]	[0.650 (0.517)]	[1.581 (0.117)]	[1.207 (0.230)]	[-0.768 (0.444)]	[0.688 (0)]	[0.449 (0.654)]
Male	25.63 (5.82)	51.16 (8.83)	43.34 (13.38)	45.61 (4.54)	29.62 (6.91)	40.62 (8.38)	46.72 (5.61)
Female	27.07 (5.94)	50.08 (9.33)	47.97 (11.73)	44.62 (4.45)	30.59 (6.90)	39.87 (9.91)	50.08 (6.28)
Race <sup>c</sup> [F (p)]	[4.538 (0.013*)]	[1.466 (0.235)]	[0.178 (0.837)]	[1.080 (0.343)]	[1.680 (0.191)]	[1.288 (0.605)]	[2.118 (0.117)]
Malay	24.80 (5.52)	50.28 (9.27)	46.93 (11.64)	44.63 (5.19)	29.40 (2.64)	40.04 (9.87)	48.13 (6.44)
Chinese	28.09 (5.90)	50.10 (9.46)	45.50 (12.84)	45.28 (3.83)	31.34 (2.82)	40.96 (8.67)	49.45 (5.89)
India	26.54 (6.07)	55.55 (0.00)	46.29 (18.00)	46.91 (2.92)	27.77 (6.80)	37.13 (7.55)	45.02 (5.17)
Religion <sup>c</sup> [F (p)]	[2.648 (0.050*)]	[0.689 (0.561)]	[0.584 (0.570)]	[0.845 (0.472)]	[1.205 (0.311)]	[1.275 (0.286)]	[1.275 (0.286)]
Islam	25.00 (5.37)	50.67 (9.01)	47.31 (11.92)	44.54 (5.15)	29.40 (7.43)	40.24 (9.82)	48.13 (6.44)
Buddha	27.90 (4.58)	49.87 (9.69)	45.89 (12.85)	45.41 (3.93)	31.40 (6.43)	41.24 (8.95)	49.42 (6.20)
Hindu	25.00 (5.82)	55.55 (0.00)	43.51 (20.61)	47.22 (3.04)	26.85 (7.38)	33.55 (0.72)	44.29 (5.86)
Christian	28.33 (5.24)	50.55 (9.24)	43.33 (11.04)	45.55 (3.51)	30.55 (4.72)	39.47 (8.29)	48.68 (3.77)
Marital status <sup>c</sup> [F (p)]	[4.507 (0.054)]	[0.219 (0.803)]	[0.151 (0.860)]	[1.410 (0.248)]	[3.686 (0.028*)]	[0.555 (0.575)]	[0.776 (0.463)]
Married	27.77 (0.00)	49.67 (9.51)	45.75 (17.84)	43.16 (4.49)	29.11 (5.84)	46.04 (9.08)	50.15 (6.99)
Single	26.26 (4.14)	50.90 (8.91)	46.55 (12.21)	45.28 (4.50)	28.88 (5.99)	47.40 (10.11)	48.28 (5.81)
Widow	25.25 (4.16)	49.49 (10.37)	44.44 (4.96)	45.95 (4.36)	32.50 (8.10)	53.55 (12.94)	47.60 (7.93)
Education level [F (p)]	[0.833 (0.437)]	[14.970 (p<0.001*)]	[0.754 (0.473)]	[1.868 (0.159)]	[0.199 (0.662)]	[1.833 (0.165)]	[4.110 (0.019*)]
Primary School	26.66 (6.00)	42.66 (11.75)	48.88 (10.87)	46.00 (4.99)	42.19 (4.99)	41.31 (7.65)	46.73 (6.99)
Secondary School	26.96 (5.99)	52.42 (7.76)	45.15 (14.50)	44.24 (4.50)	41.81 (5.43)	39.28 (8.51)	47.70 (5.81)
College/University	25.41 (5.74)	53.05 (5.61)	46.11 (10.76)	45.65 (4.36)	42.81 (4.19)	40.85 (10.90)	50.65 (7.93)
Monthly household income <sup>**</sup> [r (p)]	[-0.044 (0.631)]	[-0.075 (0.417)]	[0.075 (0.417)]	[-0.044 (0.631)]	[-0.075 (0.417)]	[-0.075 (0.417)]	[0.417 (0.108)]
Types of cancers <sup>c</sup> [F (p)]	[3.859 (<0.001*)]	[2.510 (0.062)]	[2.415 (0.053)]	[3.859 (<0.001*)]	[2.153 (0.079)]	[16.490 (<0.001*)]	[1.866 (0.121)]
Breast cancer	25.00 (5.67)	50.23 (7.59)	50.00 (15.36)	25.00 (5.67)	28.24 (5.65)	31.14 (3.07)	50.65 (6.86)
Colon cancer	29.33 (6.37)	47.36 (11.01)	41.52 (6.24)	29.33 (6.37)	31.57 (4.16)	38.91 (6.59)	46.26 (4.90)
Prostate cancer	25.00 (8.03)	50.92 (10.81)	51.38 (14.23)	25.00 (8.03)	30.55 (8.03)	45.06 (9.62)	46.27 (5.43)
Lung cancer	24.72 (5.17)	54.86 (3.59)	47.08 (12.26)	24.72 (5.17)	28.75 (8.33)	45.92 (8.14)	48.48 (6.16)
Others cancer	28.88 (4.24)	46.44 (11.49)	42.44 (11.66)	28.88 (4.24)	32.88 (5.76)	38.52 (8.60)	49.15 (6.29)
Stages of cancer <sup>b</sup> [t (p)]	[0.860 (0.392)]	[0.179 (0.858)]	[0.708 (0.480)]	[-0.700 (0.485)]	[3.220 (<0.001*)]	[0.628 (0.531)]	[5.467 (<0.001*)]
2 and 3	26.88 (5.78)	50.45 (9.03)	45.44 (12.19)	44.80 (4.16)	32.05 (5.94)	47.15 (11.35)	35.83 (9.55)
4	25.95 (6.02)	50.75 (9.19)	47.08 (13.10)	45.38 (4.85)	28.15 (7.28)	48.41 (10.49)	44.07 (8.84)
Duration disease diagnosed <sup>b</sup> [t (p)]	[0.795 (0.499)]	[1.001 (0.319)]	[2.536 (0.013*)]	[-2.183 (0.031*)]	[3.690 (<0.001*)]	[5.467 (<0.001*)]	[5.153 (<0.001*)]
≤2 year	28.23 (5.78)	51.48 (8.17)	49.30 (15.02)	44.14 (4.54)	27.77 (5.80)	35.83 (9.55)	48.05 (6.66)
>2 year	25.95 (6.02)	49.82 (9.79)	43.57 (9.40)	45.92 (4.34)	32.20 (7.15)	44.07 (8.84)	42.19 (5.78)
Types of Treatments <sup>c</sup> [F (p)]	[0.795 (0.499)]	[2.510 (0.062)]	[3.123 (0.029*)]	[3.123 (0.029*)]	[2.442 (0.068)]	[1.165 (0.236)]	[6.576 (<0.001*)]
Chemotherapy	27.59 (-5.74)	54.07 (-5.24)	40.55 (-9.58)	40.55 (-9.58)	32.96 (-7.98)	42.63 (-9.3)	52.36 (-6.07)
Radiotherapy	26.13 (-5.76)	49.63 (-9.34)	47.35 (-13.32)	47.35 (-13.32)	28.96 (-5.92)	39.02 (-9.27)	46.63 (-6.07)
Surgery	25 (-6.39)	47.53 (-11.78)	50 (-14.13)	50 (-14.13)	29.32 (-7.08)	39.47 (-9.01)	48.39 (-4.95)
Symptom management	26.76 (-6.48)	51.51 (-8.98)	49.49 (-9.11)	49.49 (-9.11)	30.3 (-7.18)	41.62 (-8.38)	48.32 (-4.28)
Comorbidity others disease <sup>b</sup> [t (p)]	[0.789 (0.432)]	[9.131 (<0.001*)]	[0.631 (0.529)]	[0.077 (0.939)]	[9.131 (<0.001*)]	[0.500 (0.618)]	[2.649 (<0.001*)]
Yes	30.4 (-6.77)	47.12 (-12.97)	45.3 (-10.91)	50.67 (-5.66)	47.12 (-12.97)	48.52 (-10.4)	54.98 (-5.18)
No	29.36 (-6.6)	61.29 (-3.83)	46.81 (-13.58)	50.75 (-4.87)	61.29 (-3.83)	47.43 (-11.17)	58.73 (-7.88)
Support status <sup>b</sup> [t (p)]	[1.380 (0.170)]	[-1.851 (0.067)]	[0.631 (0.529)]	[0.368 (0.189)]	[1.237 (0.219)]	[1.077 (0.284)]	[0.171 (0.865)]
Accept	25.43 (-6.21)	48.64 (-10.26)	45.3 (-10.91)	45.55 (-4.96)	29.13 (-6.05)	39.06 (-10.4)	48.59 (-6.65)
Non accept	26.96 (-5.68)	51.77 (-8.12)	46.81 (-13.58)	44.81 (-4.21)	30.74 (-7.32)	40.92 (-11.17)	48.39 (-5.79)
Total of financial support <sup>c</sup> [F (p)]	[0.166 (0.919)]	[3.305 (0.023*)]	[1.340 (0.265)]	[0.681 (0.565)]	[9.761 (<0.001*)]	[2.437 (0.108)]	[8.677 (<0.001*)]
None	25.83 (-5.58)	55.27 (-1.24)	47.5 (-9.44)	46.11 (-4.07)	36.11 (-8.16)	48.02 (-8.3)	44.88 (-6.08)
<MYR 1000	26.85 (-6.1)	50.3 (-10.16)	43.51 (-6.66)	45.67 (-5.23)	32.04 (-4.76)	42.17 (-10.71)	47.94 (-5.77)
MYR1000-5000	26.04 (-6.34)	47.39 (-10.46)	43.57 (-10.38)	44.96 (-4.31)	28.81 (-5.54)	36.43 (-7.43)	48.42 (-6.55)
≥MYR 5000	26.66 (-5.83)	50.88 (-8.86)	48.44 (-15.99)	44.35 (-4.55)	27.77 (-6.24)	38.84 (-8.12)	52.36 (-6.07)

\*Significant at p<0.05; \*\*MYR110-9000; <sup>a</sup>Pearson correlation test; <sup>b</sup>Independent t test; <sup>c</sup>ANOVA

score for general satisfaction (29.33), whereas the patients suffering from lung cancer have lowest general satisfaction (24.72). But the stage of cancer, duration of illness diagnosed, the type of treatment received when receiving the palliative treatment and co morbidities with other diseases does not indicate any difference in terms of satisfaction with treatment. Similarly financial support and the amount of financial support do not show any significant difference for the general satisfaction scores among the patient receiving cancer palliative treatment (Table 5).

*Factors influencing the physical component of quality of life*

Table 6 shows the the differences in the physical and mental components of quality of life scores for the patients undergoing

the palliative treatment for cancer. There is no significant difference in the scores of physical component for the quality of life for the age, gender, race, religion, marital status and household income., there are significant differences between the level of education and quality of life based on the physical component score (F=6211; p<0.001).

On the the disease factors, the variable ‘types of cancer’ shows significant difference between the quality of life of patients based on types of cancer measured using the physical component score. ANOVA was used to identify the differences of score among the different types of cancer using physical component (F=5962; p<0.001). Whereas the variables ‘stage of cancer’, ‘type of treatment’, ‘duration of diagnosis’ and ‘comorbidity with other disease’ does not show any significant difference within the



sample.

Variables 'financial aid status' does not show significant difference in quality of life within the patient sample. However there is significant difference for the variable 'total amounts of financial supports' for the quality of life of cancer patients based on the physical component score ( $F=3.005$ ;  $p=0.033$ ).

For the mental component, the variables of gender, ethnicity, education level, marital status, religion and household income show no significant difference. Whereas, age showed a significant difference within the patients' population ( $r=-0.386$ ,  $p<0.001$ ). This indicates that older the age of the respondent, the lower is the quality of life.

Based on the mental component score, only the variable 'types of cancer' shows the significant differences between quality of life within the cancer patients undergoing the palliative therapy at a teaching hospital ( $F=5962$ ;  $p<0.001$ ). The variable 'diagnosis period' also show significant difference within the study population ( $t=5153$ ;  $p<0.001$ ). Responden who were diagnosed cancer within 2 years have better quality of life as compare to the patients diagnosed with cancer for more than 2 years. Other variables 'stage of cancer', 'type of treatment received' and 'comorbidity' do not show any significant difference within the study population.

Besides that, variables 'financial supports status' also does not show any significant difference in quality of life (mental component) within the study population. But, the variable amount of financial support (total financial support) shows significant differences within the study population ( $F=7168$ ;  $p<0.001$ ). Cancer patients who received financial supports MYR 5000 or more show higher quality of life than the patients who receive financial assistance of MYR 1000 or less.

#### Satisfaction and patients' quality of life

We wanted to see if there exists any relationship between the patient satisfaction with the quality of life score (both Physical and Mental component) (Table 7).

Results of the Pearson correlation analysis are shown for the relationship between the quality of life (physical

as well as mental component) with domain of general satisfaction, technical quality, interpersonal relationship, communication, financial aspects, times spent with the doctor, and accessibility to the facilities provided for cancer patient undergoing palliative treatment.

Results shows a weak positive relationship but significant between the quality of life in physical component with general satisfaction domain ( $r=0.232$ ,  $p=0.011$ ). This result shows clearly that the satisfaction of cancer patient receiving palliative treatment is based on general satisfaction aspects for the better quality of life in physical component. Technical quality also has a weak negative but significant correlation ( $r=-0.312$ ,  $p<0.01$ ). This means the higher the patients' satisfaction based on the technical quality lower the quality of life in aspect of physical component.

For mental component of quality of life, the variables 'time with the doctor' shows a weak negative but significant correlation ( $r=-0.192$ ,  $p=0.036$ ). That means the higher the quality of life (measured with respondent's mental component score), the lower their level of satisfaction based on time spend with the doctor. Satisfaction with accessibility aspects also have a weak negative but significant correlation ( $r=-0.279$ ,  $p<0.001$ ). That means the higher quality of life of cancer patients receiving the palliative treatment, the lower mental component of the quality of life based on accessibility aspects.

## Discussion

The purpose of this research is to investigate and determine the relationship between quality of life and patient satisfaction among the patients receiving cancer palliative treatment. Based on result of the study, most of the cancer patients undergoing palliative treatment have a higher quality of life based on the mental aspect than the physical aspects. This is due to their health condition precisely and according to the disease that is spreading and that caused them to lose their ability a bit based on physical aspects (Siddiqua et al., 2012).

The results presented shows a significant relationship between satisfactions toward palliative treatment received (general satisfaction, the technical quality, time spent with the doctor, and accessibility aspects based on the facilities provided) and the quality of life (Physical Component and Mental Component). Research findings by Avery and friends (2006) at a Hospital in United Kingdom ( $N=181$  cancer patients undergoing palliative care) showed that there is no relationship between quality of life and satisfaction with the treatment received. This may be because the quality of life of cancer patients remains low whether they received curative treatment or palliative care, because there was no difference between the quality of life among the satisfied patients or not satisfied patients based the treatment received. The researcher also believes that quality of life of cancer patients undergoing palliative treatment is determined by the types of treatment and the outcome of quality of life patient and not based on the satisfaction with treatment. Research findings is also supported by the study that was done by Kleeberg and

**Table 6. Relationships among the Factors Influencing the Quality of Life (Physical and Mental Composite Components)**

Variables	Physical component	Mental component
Age <sup>a</sup>	$r=0.098$ ; $p=0.700$	$r=-0.386$ ; $p<0.001$ *
Gender <sup>b</sup>	$t=2.474$ ; $p=0.358$	$t=1.602$ ; $p=0.112$
Race <sup>c</sup>	$F=0.756$ ; $p=0.472$	$F=2.599$ ; $p=0.107$
Religion <sup>c</sup>	$F=0.654$ ; $p=0.582$	$F=0.933$ ; $p=0.427$
Marital status <sup>c</sup>	$F=0.073$ ; $p=0.930$	$F=0.056$ ; $p=0.830$
Education level	$F=6.211$ ; $p<0.001$ *	$F=2.032$ ; $p=0.136$
Monthly household income <sup>a</sup>	$r=0.043$ ; $P=0.640$	$r=0.046$ ; $P=0.617$
Types of cancers <sup>c</sup>	$F=5.962$ ; $p<0.001$ *	$F=5.522$ ; $p<0.001$ *
Stages of cancer <sup>b</sup>	$t=0.781$ ; $p=0.226$	$t=0.154$ ; $p=0.878$
Duration disease diagnosed <sup>b</sup>	$t=0.382$ ; $p=0.425$	$t=5.153$ ; $p<0.001$ *
Types of treatments <sup>c</sup>	$F=2.087$ ; $p=0.106$	$F=3.117$ ; $p=0.029$ *
Cormobiditiy others disease <sup>b</sup>	$t=1.961$ ; $p=0.052$	$t=1.831$ ; $p=0.070$
Support status <sup>b</sup>	$t=1.354$ ; $p=0.437$	$t=1.420$ ; $p=0.158$
Total of financial support <sup>c</sup>	$F=3.005$ ; $p=0.033$ *	$F=7.168$ ; $p<0.001$ *

\*significant at  $p<0.05$ ; <sup>a</sup>Pearson correlation test; <sup>b</sup>Independent t test; <sup>c</sup>ANOVA

friends (2005) which found that there was a relationship between the quality of life of patients by satisfaction with the treatment received.

In another study conducted among 3,384 cancer patients in Germany showed that the satisfaction with treatment, particularly in the selection decision satisfaction, the doctor communication with patients, and treatment organizations provide higher impact on quality of life because it not only can increase the functionality of the patient physically but it can improve their mental functioning because with the information provided for treatments make them better understand and to meet their needs and circumstances when they seek for treatment.

Besides that, there is negative relationship in quality based on the physical component score, the more better the quality of life of cancer patients undergoing palliative treatment, the lower their level of satisfaction on the treatment given. This may be due to the fact that the health condition of such patients are getting worse and requires them to get and try all types of treatment and undergo medical checkup to find out about their health.

Cancer disease is easily spread and will attack other part of the body. The physical condition may be getting worse and require the patient to seek treatment at various places based on their treatment regimen. Besides that they may had to use a lot of energy for moving from one place to another place, even though they may get nurse supports along with other people support around them. These conditions may make these patient easily tired and feel uncomfortable.

This finding of this study is also supported by research done by Wong et al. (2008) that shows that there was no relationship between the quality of life of patients and the treatment satisfaction with services received, particularly in the aspect of the technical quality in facility. The study by Wong et al., was conducted include 235 patients with liver cancer and 334 patients with lung cancer in Hong Kong, and it shows that the patients satisfaction based on the facility have an impact toward quality of life patient because it facilitate patients to get treatment easily. But, it is also affect them in physical aspects. Even though medical devices are complete and available but still patient is needed to be fully monitored by a doctor. Although treatment can relieve the pain, but the primary disease still exist, that may continue to cause suffering and require them undergoing many types of treatments. That may burden patients more and requires the patient to do a lot of movement and that may make them uncomfortable.

There are negative correlation between patient satisfaction on accessibility and the time spent by the doctor. This negative relationship by times spent with the doctor is based on mental component aspect. This means that more they spending time with the doctor, the lower their quality of life will become. This is because more time the cancer patient spent with their doctor, more aware the patients become about their medical condition, and that may caused them to become depress. More so if the health condition of the patient is getting worse it may require the doctor to spend more time with the patient and monitor to improve their functionality and reduce the pain. If their health conditions become more worse it also makes

them stay in the hospital longer and require the doctor to monitor strictly their conditions. This situation may make these patients more depressed because they feel that their life is getting shorter.

Another study done by Asadi et al. (2004) found that there was a relationship between satisfaction and quality of life in mental component aspects. Patient's health condition may require the patient to get several treatments to reduce their pain and complications that are caused by treatment. Satisfaction or dissatisfaction have an impact toward quality of life because even if the patients are satisfied by the services provided or not, it does not guarantee a good quality of life because of the pressure to get various treatment causes them to feel it as a burden.

Besides that, results also show that there is a negative relationship between satisfactions and the accessibility aspects with the quality of life in mental component. The patient in stage 4 cancers may require getting special treatment to reduce the pain that they faced. If conditions become more serious its require patients to seek treatment more often and often go through various of medical check to follow up their health condition in more details and this may make them feel more pressure and distressed. Although they were satisfied with the treatment given, but their quality of life in terms of mental component may become very low.

Based on the study findings, researchers found that there was a significant relationship between satisfactions toward treatment received and the quality of life of cancer patients undergoing palliative treatment, especially in terms of accessibility, technical quality, and time spend with doctor and general satisfaction.

In conclusion, patients undergoing palliative care were classified as patients who do not have very good chance to be cured. The purpose of palliative care is to maximize quality of life of such patients from different aspects in particular physical, mental and spiritual (Kumar et al., 2008). The improvements in the quality life of cancer patients can be achieved via a range of services network to meet the needs of patients and the care giver. Another good approach is to look for the satisfaction from the service aspect, apart from social aspects as well as disease aspects to enhance the quality of life and provide more comfort and treatments available to them. Hence, this study was carried out to reviews the quality of life of cancer patients undergoing palliative care and the factors the mainly affect their satisfaction toward treatments. From the findings of this research, quality of life and satisfaction with palliative care have a relationship and are related with each other. Satisfaction with treatment will contribute to the better quality of life for cancer patients who received the palliative treatments because the main objectives of the palliative care is to obtain the optimal quality of life (Leung et al., 2010) and increase their ability in dealing toward treatment process.

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