



UNIVERSITI PUTRA MALAYSIA

**RELATIONSHIP BETWEEN NUTRITIONAL STATUS AND QUALITY OF
LIFE OF ADVANCED CANCER PATIENTS IN SELECTED HOSPICES IN
PENINSULAR MALAYSIA**

NEGAR SHAHMORADI

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By

NEGAR SHAHMORADI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirements for the Degree of Master of Science**

February 2010

DEDICATION

I would like to dedicate this thesis to

All patients who had contributed to this study

For their great assistance and support for this research throughout the course of this study

Associate Professor Dr. Mirnalini Kandiah, my supervisor who greatly assisted and guided me throughout the research and in writing this thesis

My beloved parents, Shamsuddin and Azam; my honored sister and her family, Targol, Mohammad and Heerud

For their endless support, encouragement and great inspiration all the way since the beginning of my research. I love you.

Finally, I have to thank my wonderful friends in Malaysia who constantly motivated and supported me in all ways possible

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master in Nutritional Sciences

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February 2010

Chairman: Associate Professor Mirnalini Kandiah, PhD

Faculty: Medicine and Health Sciences

In Malaysia, cancer is ranked third among most frequent causes of medically certified deaths. A total of 75,744 new cancers cases were diagnosed among Malaysians in the years 2003-2005. Cancer and cancer therapy associated complications tend to change patient's metabolism and nutritional status and in general quality of life (QOL). In the advanced stages when the disease becomes incurable, and treatment has failed, patients often seek the assistance of hospice facilities for palliative care. The objective of this cross-sectional study was to determine the relationship between nutritional status and quality of life among advanced cancer patients in hospice home care, as well as to determine the significant predictors of nutritional status. The study also examined the relationship between subjective indicators and objective indicators of nutritional status. The study was conducted on 61 patients cared by selected hospices in Peninsular Malaysia. To be eligible for this study, patients were screened for functional status using the Eastern Cooperative Oncology Group (ECOG) scale. Patients with ECOG 0-3

indicating good to fair functional status were recruited with informed consent. Information on socio-demographic, disease status, nutritional status and quality of life, complementary and alternative medicine use, nutritional support, were obtained. Assessment of nutritional status was performed using the Patient-Generated Subjective Global Assessment (PG-SGA), dietary intake and anthropometry measurements. Anthropometry evaluations included height, weight, triceps skinfold, mid-upper arm circumference and arm muscle area. The Hospice Quality of Life Index (HQLI) was used to determine quality of life of the subjects.

Patients were between 18 to 74 years old and the mean age was 59.2 ± 12.5 years. Males comprised 45.9% of the sample while 54.1% of them were females. Chinese subjects (67.2%) were predominant, followed by Malays (18%) and Indians (14.8%). The primary disease stage for majority of patients (72.1%) was stage four. The most common cancers were breast (18%), rectum (13.1%) and colon (13.1%). The PG-SGA found 14.7% (9) of 61 patients to be well nourished, 52.5% (32) were moderately or suspected of being malnourished and 32.8% (20) of them were severely malnourished. The mean total PG-SGA score was 13.6 ± 7.0 , which indicated a critical need for nutrition intervention. In addition, the negative correlation was found between PG-SGA score and objective indicators of nutritional status. General Linear Model (GLM) univariate analysis revealed that only ethnicity ($p=0.016$), ECOG status ($p=0.000$), cancer duration ($p=0.022$) and energy intake ($p=0.000$) were significantly related to nutritional status. These four variables were able to explain 63.8% of the total variation in nutritional status.

In terms of quality of life, the total HQLI mean score for all subjects was 189.9 ± 51.7 . Functional well-being subscale scores were the lowest among the three subscales, followed by psychophysiological and social/ spiritual well-being subscale scores. GLM showed that PG-SGA score ($p=0.000$) and ECOG ($p=0.016$) were found to be significant predictors of total quality of life score. These two variables explained 43.9% of the total variation in total quality of life score. PG-SGA score showed a larger effect size (>0.15) on quality of life indicating a stronger effect than functional ability as determined by ECOG. In addition, PG-SGA score and ECOG were the significant predictors for psychophysiological and functional domains of quality of life. No significant predictors were found for social/spiritual domain.

In conclusion, these findings showed a high prevalence of malnutrition among advanced cancer patients in hospice care. The results also revealed that patients with poorer nutritional status had lower quality of life. The negative correlation between PG-SGA score and objective indicators of nutritional status showed that PG-SGA score can be applied instead of several objective measurements for assessing nutritional status. Therefore, this study has contributed to the new knowledge base on the relationship between nutritional status and quality of life of cancer patients in hospice care that has not been previously reported in Malaysia.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Sarjana Sains Pemakanan

**PERKAITAN ANTARA STATUS PEMAKANAN DENGAN KUALITI
KEHIDUPAN PESAKIT KANSER LANJUTAN DI PENJAGAAN RUMAH
HOSPIS TERPILIH DI SEMENANJUNG MALAYSIA**

Oleh

NEGAR SHAHMORADI

Februari 2010

Pengerusi: Profesor Madya Mirnalini Kandiah, PhD

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Kanser adalah salah satu masalah kesihatan utama di Malaysia. Ia disenarai sebagai ketiga tertinggi bagi punca kematian yang diiktiraf secara perubatan. Sejumlah 75, 744 kes baru telah didiagnosis dalam kalangan rakyat Malaysia pada 2003-2005. Komplikasi yang berkait dengan kanser dan terapi kanser berupaya untuk mengubah metabolisma dan status pemakanan, dan secara umum kualiti kehidupan pesakit (Quality of Life - QOL). Pada tahap yang sudah lanjut apabila penyakit tidak boleh disembuhkan dan rawatan telah gagal, pesakit sering meminta bantuan pusat rawatan akhir untuk mendapat rawatan paliatif. Objektif kajian keratan rentas ini adalah untuk menentukan hubungan antara status gizi dan kualiti kehidupan di antara pesakit kanser di rumah penjagaan rumah penjagaan, serta untuk menentukan penunjuk yang bermakna bagi status pemakanan. Selain itu, penyelidikan ini mengkaji hubungkait antara penunjuk subjektif dan penunjuk objektif dalam status gizi. Penyelidikan ini dijalankan ke atas 61 orang pesakit di bawah jagaan pusat rawatan akhir terpilih di sekitar Semenanjung

Malaysia. Untuk layak menyertai kajian ini, pesakit telah dipilih mengikut status fungsi berpandukan skala Kumpulan Koperasi Onkologi Timur (Eastern Cooperative Oncology Group - ECOG). Pesakit dengan ECOG 0-3, yang melambangkan status fungsi tahap baik ke sederhana, telah diambil dengan kebenaran. Maklumat tentang sosio-demografi, status penyakit, status pemakanan dan kualiti kehidupan, perubatan yang bersesuaian dan perubatan gantian yang digunakan, telah diambil. Penilaian tentang status pemakanan telah dilakukan berpandukan Penilaian Global Subjektif Yang Dihasilkan Pesakit (Patient-Generated Subjective Global Assessment - PG-SGA), pengambilan makanan dan ukuran antropometri. Penilaian antropometri adalah termasuk tinggi, berat, lipatan kulit trisep, ukur-lilit bahagian atas lengan dan kawasan otot tangan. Indeks Kualiti Kehidupan Pusat Rawatan Akhir (Hospice Quality of Life Index - HQLI) telah digunakan untuk menentukan kualiti hidup para peserta.

Pesakit berumur antara 18 hingga 74 tahun dan purata umur adalah 59.2 ± 12.5 tahun. Lelaki merangkumi 45.9% daripada sampel manakala 54.1% daripada mereka adalah wanita. Tahap kanser bagi kebanyakan pesakit (72.1%) adalah tahap ke-empat. Kanser paling kerap berlaku adalah kanser payudara (18%), dubur (13.1%) dan usus (13.1%). PG-SGA mendapati 14.7% (9) daripada 61 pesakit diberikan pemakanan seimbang, 52.5% (32) mendapat sederhana atau dijangka tidak mendapat pemakanan seimbang dan 32.8% (20) daripadanya mendapat pemakanan tidak seimbang yang teruk. Purata jumlah skor PG-SGA adalah 13.6 ± 7.0 , melambangkan kepentingan campurtangan dalam gizi pemakanan. Selain itu, hubungkait negatif ditemui antara skor PG-SGA dan penunjuk objektif dalam status pemakanan. Analisa Model Linear Umum univariat (General Linear Model - GLM) menunjukkan bahawa hanya etnik ($p=0.016$), status ECOG

($p=0.000$), tempoh kanser ($p=0.022$) dan pengambilan tenaga ($p=0.000$) mempunyai hubungkait bermakna dengan status pemakanan. Empat pembolehubah ini mampu menjelaskan 63.8% daripada keseluruhan pembolehubah dalam status gizi. Dalam erti kualiti kehidupan, jumlah purata skor HQLI untuk kesemua peserta adalah 189.9 ± 51.7 . Skor subskala fungsi kesejahteraan adalah yang terendah antara ketiga-tiga subskala, diikuti dengan skor psikofisiologi dan subskala kesejahteraan sosial/rohani. GLM menunjukkan bahawa skor PG-SGA ($p=0.000$) dan ECOG ($p=0.016$) adalah penunjuk yang bermakna bagi jumlah skor kualiti kehidupan. Kedua-dua pembolehubah ini menjelaskan 43.9% daripada keseluruhan jumlah skor kualiti kehidupan. Skor PG-SGA yang menunjukkan kesan saiz yang lebih besar (>0.15) ke atas kualiti kehidupan menyarankan terdapatnya kesan lebih kuat daripada kemampuan berfungsi sebagaimana yang ditentukan oleh ECOG. Selain itu, skor PG-SGA dan ECOG adalah penunjuk yang bermakna untuk psikofisiologi dan bahagian fungsi dalam kualiti kehidupan. Tiada penunjuk yang bermakna ditemui untuk bahagian sosial/rohani.

Kesimpulannya, hasil kajian ini menunjukkan terdapatnya prevalens yang tinggi dalam pemakanan tidak seimbang dikalangan pesakit kanser tahap lanjut di pusat rawatan akhir. Kajian ini turut menunjukkan bahawa pesakit dengan status pemakanan seimbang yang rendah mempunyai kualiti kehidupan yang rendah. Hubung-kait negatif antara skor PG-SGA dan penunjuk objektif dalam status pemakanan menunjukkan bahawa skor PG-SGA boleh digunakan dan bukannya beberapa ukuran objektif untuk penilaian status gizi pemakanan. Oleh itu, penyelidikan ini bertujuan untuk memberikan asas pengetahuan baru tentang status gizi dan kualiti kehidupan bagi pesakit kanser di pusat rawatan akhir yang sebelum ini belum pernah dilaporkan di Malaysia.

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Last but not least, I would like to thank my loving parents, my sister and her family, as well as friends for their moral support and guidance throughout the period of this study.

I certify that an Examination Committee has met on date on viva voce to conduct the final examination of Negar Shahmoradi on her Master thesis entitled “Impact of Nutritional Status on the Quality of Life of Advanced Cancer Patients in Hospice Home Care” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The committee recommends that the students be awarded the Master Science (Nutritional Sciences).

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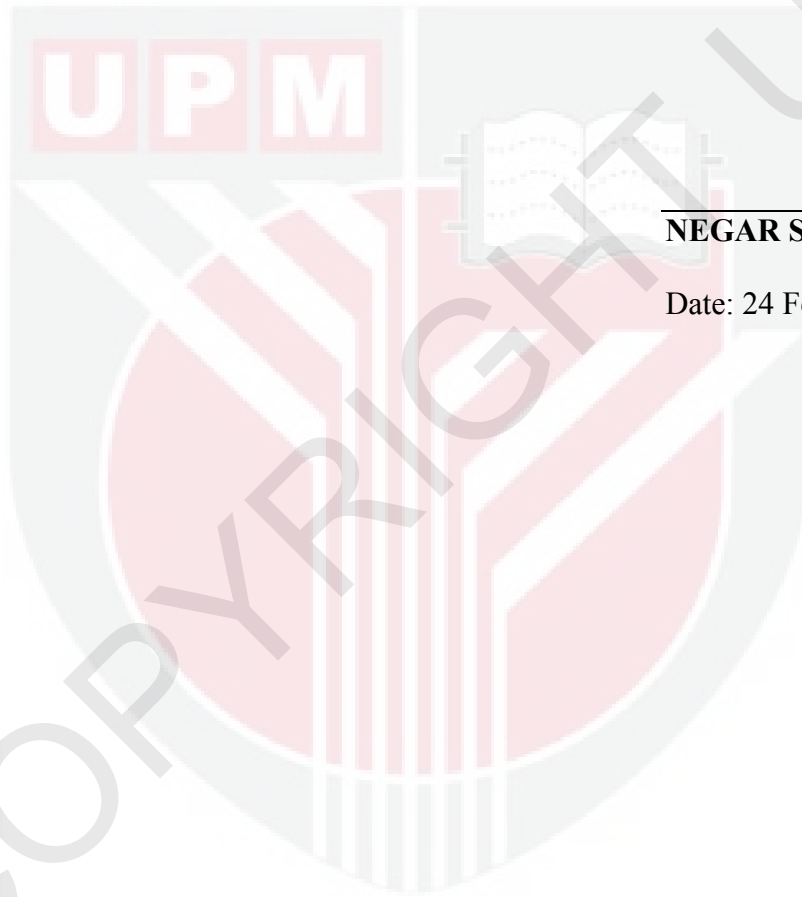
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Date: 13 May 2010

DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.



NEGAR SHAHMORADI

Date: 24 February 2010

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