

A profile of cancer patient outcomes from a tertiary care teaching hospital in Malaysia

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ABSTRACT

Introduction: The aim of this paper was to determine the sociodemographic and cancer characteristics of patients with cancer at a tertiary care centre.

Methods: For the study, 80 newly-diagnosed cancer patients were selected and interviewed using structured questionnaires that included sociodemographic and cancer characteristic profiles. At the end of the study period of two years, the survivorship status of the patients was determined.

Results: Gender, occupational status, type of cancer and stage of cancer were found to be significantly associated with the survival status among the study group of cancer patients. Results of logistic regression analysis showed that deceased patients were significantly more likely to be pensioners rather than employed, aged 60–69 years rather than 40–49 years, to have all other types of cancer rather than breast cancer, and to be in Stage 3 or 4 of the disease rather than in Stage I of the disease.

Conclusion: There is a greater necessity for psychosocial research in order to achieve optimal health for patients with cancer, and in turn, to improve the survival of cancer patients.

Keywords: cancer characteristics, cancer profile, sociodemographic profile, survivorship status, tertiary care

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INTRODUCTION

Cancer is a general term for more than 100 different diseases characterised by the uncontrolled, abnormal growth of cells, with the potential ability to spread to vital organs and kill. The World Health Organization (WHO) had envisaged that the number of cases of cancer

would double in developing countries by the year 2020.⁽¹⁾ Cancer is an increasing health problem in Malaysia. It is now the fourth leading cause of death among medically-certified deaths. Cancer of the lung is the most common killer among malignancies.⁽²⁾ In 1990, there were about 8.1 million new cancer cases worldwide (excluding non-melanotic skin cancer). The five most frequent types were cancers of the breast, colon and rectum, cervix, stomach and lung in females, and cancers of the lung, stomach, colon and rectum, prostate and liver in males. These cancer types accounted for about 55% of all cancers.⁽³⁾

Cancer is a key concern in all nations and the relative importance of particular kinds of cancer is highly variable. This might be in some way due to the combined effects of the differences in population size, age structure, detection, reporting and underlying aetiological factors. For instance, prostate cancer is relatively more widespread in more developed countries, as these nations have a larger proportion of people in the older age group and who go for frequent screening activities. On the other hand, liver cancer occurs less frequently in these countries since one of the major aetiological factors (i.e. hepatitis B) is less prevalent.⁽³⁾ At present, there is limited information pertaining to the sociodemographic and cancer characteristic aspects of patients having cancer, although one paper attempted to investigate the impact of cancer on health-related quality of life in breast cancer survivors.⁽⁴⁾ Therefore, this paper aimed to evaluate the epidemiological aspect in assessing the possible impact of patients with cancer, based on the sociodemographic and cancer characteristic profiles from a tertiary centre, with a heterogeneous group of patients. This was achieved by comparing participants who had survived against those who had died during the study period.

METHODS

The project was approved by the Department of Psychiatry technical and ethics committee, Hospital Universiti Kebangsaan Malaysia. Permission was obtained from the Head of Department of Oncology and Radiotherapy of Hospital Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, where the data was collected. The study

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Table I. Frequency distribution of patient outcome status by sociodemographic and cancer characteristics.

Demographics (n = 77)	No. (%) of deceased group	No. (%) of survivor group	Total no.	p-value
Age groups (years)				
10–29	4 (40.0)	6 (60.0)	10	0.092
30–39	3 (27.3)	8 (72.7)	11	
40–49	7 (26.9)	19 (73.1)	26	
50–59	8 (53.3)	7 (46.7)	15	
60–79	10 (66.7)	5 (33.3)	15	
Gender				
Male	21 (58.3)	15 (41.7)	36	0.005
Female	11 (26.8)	30 (73.2)	41	
Ethnicity				
Malay	19 (39.6)	29 (60.4)	48	0.650
Others	13 (44.8)	16 (55.2)	29	
Religion				
Islam	19 (39.6)	29 (60.4)	48	0.369
Buddhist	11 (52.4)	10 (47.6)	21	
Others	2 (25.0)	6 (75.0)	8	
Marital status				
Married	21 (36.8)	36 (63.2)	57	0.156
Unmarried/divorced/widowed	11 (55.0)	9 (45.0)	20	
Occupational status				
Employed	10 (26.3)	28 (73.7)	38	0.018
Unemployed	11 (50.0)	11 (50.0)	22	
Pensioner	11 (64.7)	6 (35.3)	17	
Educational level				
None or primary education	9 (56.2)	7 (43.8)	16	0.222
Secondary education till SRP or lower certificate of education	6 (60.0)	4 (40.0)	10	
Secondary education till SPM or GCE-O Level equivalent	9 (31.0)	20 (69.0)	29	
Tertiary education	8 (36.4)	14 (63.6)	22	
Type of cancer				
Female breast	1 (5.3)	18 (94.7)	19	< 0.005
Others	31 (53.4)	27 (46.6)	58	
Stage of cancer (n = 75)*				
1	4 (17.4)	19 (82.6)	23	< 0.005
2	5 (20.8)	19 (79.2)	24	
3	5 (55.6)	4 (44.4)	9	
4	16 (84.2)	3 (15.8)	19	

* Two subjects were excluded as they had no proper universally-accepted staging system, i.e. acute lymphatic leukaemia and multiple myeloma.

population included patients diagnosed with cancer within three months. This cohort was being referred to a tertiary hospital in Kuala Lumpur, Malaysia to undergo treatment for the first time. Eligibility criteria included age 18 years and older. Exclusion criteria included patients with a non-standardised treatment regime, organic brain syndrome, debilitating illness, previous psychiatric diagnosis, mental retardation and benign conditions. Informed consent was obtained from each patient beforehand. The duration of patient recruitment for the study was ten months.

During the initial assessment, participants were interviewed using structured questionnaires that included sociodemographic data (i.e. age, gender, race/ethnicity, religion, marital status, occupation, and educational level) and cancer characteristic profiles (i.e. type of cancer and staging). The status of the patient was reassessed at the

end of the two-year study. Data was analysed using both Epi-info version six (Centers for Disease Control and Prevention, Atlanta, Georgia, USA) and the Statistical Package for Social Sciences version 13 (SPSS Inc, Chicago, IL, USA). A p-value of < 0.05 was chosen as statistically significant, while logistic regression was used to analyse the association between selected sociodemographic and cancer characteristics, and survivorship status. The results from the logistic regression analysis are presented as odds ratio (OR) with 95% confidence interval (CI).

RESULTS

Out of the total 221 new cases that were referred to the oncology unit during the recruitment period, only 80 were eligible. All the 80 subjects consented to participate in the study and were followed up to determine their survival

Table II. Frequency distribution of the patient outcome status by type of cancer.

Type of cancer	No. (%) of survivor group	No. (%) of deceased group	Total no.
Head & neck	4 (44.4)	5 (55.6)	9
Lung & mediastinal	1 (14.3)	6 (85.7)	7
Gastrointestinal tract	9 (52.9)	8 (47.1)	17
Female breast	18 (94.7)	1 (5.3)	19
Genitourinary	1 (25.0)	3 (75.0)	4
Gynaecological	5 (71.4)	2 (28.6)	7
Bone & soft tissue	2 (40.0)	3 (60.0)	5
Skin	1 (50.0)	1 (50.0)	2
Unclassified	0 (0)	1 (100)	1
Neurological	1 (100.0)	0 (0)	1
Haematological	1 (33.3)	2 (66.7)	3
Endocrinology	2 (100.0)	0 (0)	2
Total	45	32	77

status. Hence, the response rate was 100%. At the end of two years, a total of 32 subjects had died, 45 subjects survived, while the status of three subjects was unknown despite numerous attempts to contact them. Therefore, these three participants were considered to have dropped out of the study.

A total of nine study variables were analysed. The majority (33.8%) of the patients were 40–49 years of age, female (53.2%), Malays (62.3%), married (74.0%), currently employed (49.4%) and had attained a higher secondary level education (37.7%). Almost a quarter (24.7%) suffered from breast cancer alone. Almost 63% of all patients were in Stages 1 and 2 of the disease. Table I shows the frequency distribution of the study variables by patient outcome status. Only four variables, i.e. gender, occupational status, type of cancer and stage of cancer, showed a significant difference between the surviving and deceased patients. All other study variables did not vary significantly between these two patient groups.

With regard to gender, the proportion of the deceased patients was higher among males (58.3%) compared to females (26.8%), while the proportion of deceased patients with regard to occupation was highest among pensioners (64.7%), followed by the unemployed (50.0%) and the employed (26.3%). In addition, pertaining to the individual cancer group, it was shown that the percentage of deceased patients was highest with unclassified (100.0%), followed in decreasing order by lung and mediastinal (85.7%), genitourinary (75.0%), haematological (66.7%), bone and soft tissue (60.0%), head and neck (55.6%), skin (50.0%), gastrointestinal (47.1%), gynaecological (28.6), female breast (5.3%), endocrine (0.0%), as well as neurological (0.0%) cancers (Table II). The proportion of deceased patients was also highest with Stage 4 malignancies (84.2%), with the numbers gradually declining with earlier staging of the disease.

Table III. Association between selected socio-demographic and cancer characteristics and outcome status.

Demographics (n = 77)	OR (95% CI)
Age (years)	
10–29	1.81 (0.39–8.38)
30–39	1.02 (0.21–4.96)
40–49*	–
50–59	3.10 (0.82–11.78)
60–79	5.43 (1.37–21.57)
Occupational status	
Employed*	–
Unemployed	2.90 (0.93–8.44)
Pensioner	5.13 (1.50–17.54)
Type of cancer	
Female breast*	–
Others	20.67 (2.59–165.21)
Stage of cancer (n = 75)†	
1*	–
2	1.25 (0.29–5.39)
3	5.94 (1.08–32.51)
4	25.33 (4.92–130.34)

* reference group

† Two subjects were excluded as they had no proper universally-accepted staging system, i.e. acute lymphatic leukaemia and multiple myeloma.

With regard to age, deceased patients were at least five times more likely (OR 5.43, 95% CI 1.37–21.57) to be aged 60–79 years than 40–49 years (Table III). The study also showed that the deceased were significantly more likely to be pensioners than employed (OR 5.13, 95% CI 1.50–17.54). Both deceased patients and survivors were equally likely to be unemployed. In terms of type of cancer, it was noted that the deceased were at least 21 times more likely (OR 20.67, 95% CI 2.59–165.21) to suffer from all other types of cancer compared to breast cancer. Deceased patients were also more likely to be in the later stages of the disease, i.e. Stages 3 and 4 compared to Stage 1 (OR 5.94, 95% CI 1.08–32.51; and OR 25.33, 95% CI 4.92–130.34, respectively).

DISCUSSION

According to WHO, cancer is a financial burden not only to the patient but also to the nation on the whole, as the cost of cancer treatment is very high.⁽⁵⁾ It was noted at the conclusion of this study that the deceased patients were significantly more likely to be pensioners as opposed to being employed. This might not be surprising since pensioners are usually predisposed to lower income, which in turn could lead to the inability to afford the chemotherapeutic drugs, especially the newer varieties which are reputed to have a better side-effect profile, and subsequently lead to better compliance. Eventually, individuals without medications due to these reasons or individuals who are non-compliant due to intolerable side effects from the traditional chemotherapeutic medications, would certainly increase the probability of a fatal outcome from the cancer progression.

The study showed that, compared to the middle age group of 40–49 years, the deceased patients were more likely to be in the older age groups of 50–59 years and 60–69 years, although the association was only significant for the latter group. Ageing modifies not only the ability of the human body to adapt to illnesses but also to any form of treatment,⁽⁶⁾ and thus it was not surprising that this age group succumbed to the brunt of cancer more readily compared to the other age groups. The data from this study revealed that the deceased patients were significantly more likely to have other types of cancer compared to female breast cancer. It has been established that breast cancer disease generally has a more encouraging survival rate.⁽¹⁾

Clearly, staging of cancer had an important impact on survival as the deceased patients were significantly more likely to be in Stage 3 or 4 of the disease than in Stage 1. This was not an unexpected finding, given the fact that advanced diseases (i.e. Stages 3 and 4) were certainly associated with distant metastasis. The presence of distant metastasis was the worst prognosis factor. This was made worse due to its hindrance to the efficacy of treatment in terms of response as well as outcome.⁽⁷⁾ The main limitation of this study was the small sample size and the

heterogeneity of the cancer patients, especially in terms of type of cancer which could influence the reliability of the results. It is known that survival also depends on type of cancer, histology and pathology. Furthermore, we did not control for confounding factors, such as age, type of cancer and other relevant sociodemographic variables. The fact that the deceased subjects were more likely to be pensioners than employed is most likely explained by the advancing age of the former. Further studies are required to establish the most cost-effective cancer control approaches which are primarily relevant to Malaysia, a developing country. There is certainly a greater necessity for psychosocial research in order to attain optimal health for patients with cancer.

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