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**Psychosocial Factors Associated with Quality of Life of Patients with Cancer in Southern Sri Lanka**

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**Abstract**

**Background:** Cancer is the second leading cause of death worldwide following heart disease; it is a stressful event that may profoundly affect the physical, psychological, social, emotional and spiritual health of the patients and such health issues can change the quality of life (QoL). It is observed that psychosocial factors impair cancer patients' QoL, comfort level and treatment compliance, which can affect survival.

**Objective:** The main objective of this study was to examine psychosocial factors associated with QoL of patients with cancer treated at the Teaching Hospital Karapitiya, Galle.

**Methodology:** A descriptive cross-sectional study was conducted with a sample of 400 cancer patients treated in the Oncology ward. Data were collected after ethical clearance using an interviewer-administered questionnaire. Scales were used to assess psychological distress (PD), depressive symptoms (DS), family support (FS), religious support (RS), coping strategies and QoL of the cancer patients.

**Results:** The mean age was 56 years (range 25-88). The most common cancer type was Breast cancer (24%). The higher prevalence of PD (66%) and a lower prevalence of DS (9%) were reported. FS was the most prominent support system and the majority was used adaptive coping methods. The social QoL was considerably low. FS and PD were the most significant associated factors of QoL.

**Conclusions:** The psychosocial status of cancer patients had impacted their QoL. Psychological distress seems to be major issue rather than their depressive symptoms. Although they had obtained satisfied family support; social QoL was at a lower level. Formal and low-cost psychosocial support services should be provided for needy patients to improve their QoL.

**Keywords:** *Quality of life, Cancer, Distress, Depression, Support, Sri Lanka*

**Introduction**

Cancer is a trending disease that can be seen among all community groups in both developing and developed countries (International Agency for Research on Cancer-World Health

Organization-IARC, 2010). It has become the second leading cause of mortality in both developed and developing countries, only second to the mortality rates of cardiovascular diseases (IARC, 2010). The patterns of cancer prevalence in Sri Lanka are similar to those in the developed countries, and cancers are considered as the second leading cause of death in Sri Lanka (Cancer Registry, 2009; Medical Statistical Unit, 2012).

As the chronic disease, the majority of the cancer patients have to live with it till they die. Thus, enhancement of the quality in the remaining life while on treatment is the main focus in the extended management of patients with cancer. Also, cancer is a stressful event that may profoundly affect the physical, psychological, social, emotional and spiritual health of the patients and such health issues can change the patients' quality of life (Kim, 2007). Imbalances of psychological well-being will result in mental illnesses that would ultimately end up with physical morbidities later as well. Also, patients diagnosed with chronic physical morbidities (e.g. Heart diseases, Diabetes, Cancer, etc.) are at increased risk for different psychological problems such as psychological distress, depression, anxiety and etc. (Kim, 2007). Cancer patients should adapt to a certain degree of stress, but the continuation of stress would affect negatively to their lives (Taylor, 2006); also depression is a disabling syndrome that affects 15% to 25% of cancer patients (National Institute of Health-NIH, 2012).

The overall quality of life (QoL) is a fundamental need of a cancer patient as seen in other human beings (Bottomley, 2002); have the same needs which should be prioritized as others (Waldron, 1999). Thus, physical, psychological, social, emotional and spiritual aspects of the life of the patients should be maintained to have a better quality of life for cancer patients.

As stated in above, cancer diagnosis or living with cancer is a combination of challenges including distress, disabilities, inability to do activities of daily living (ADL), inadequate income, poor social interactions, symptoms relapses and tolerance (Fobair, *et al.*, 2002). Under such circumstances, social support (SS) has given an enormous contribution to improve the mental and physical well-being of human beings. SS is a multi-dimensional construct, comprised of different aspects like family/social network, occupation, emotional/religious support and instrumental support (Guan, *et al.*, 2013). Support from family/friends/relatives and assistance from other personnel or community programme facilitates the patient's ability to cope with disease-related stress (Nazik, *et al.*, 2014; Weeratunga, *et al.*, 2018a; Weeratunga, *et al.*, 2018b).

Cancers have become a vital public health issue in Sri Lanka as seen in many other countries. Cancer-related health care facilities are not adequate and not accessible to all. Disparities in health care provision, unavailability of resources, delayed diagnosis are some of the factors which negatively affect the quality of life of cancer patients in the country. Also, limited information is available on the psychosocial needs of cancer patients (Mudduwa & Punchihewa, 2011) and what measures are taken to fulfill such needs up-to-date. Considering the current situation in Sri Lanka, gaps exist in most aspects of management in patients with cancer including fulfilling different needs and providing support.

Available facilities are not adequate to fulfill all requirements of patients with cancer in Sri Lanka due to increasing demand. Although cancer patients are treated physically most of the time, their psychological and other aspects may not be deliberated and highlighted. These consequences lead to a plan for this study; thus, examine the psychosocial factors associated with the quality of life of patients with cancer was the main focus of this study. It was expected that the outcomes would be useful for the health care professionals, policymakers/managers, and related government authorities to improve services for cancer patients in Sri Lanka.

### **Methodology**

The descriptive cross-sectional design was applied at the cancer unit, Teaching Hospital Karapitiya, Galle, Sri Lanka. The 400 heterogeneous cancer patients who received treatment from the cancer unit were included after obtaining informed written consent.

Having confirmed primary diagnoses more than six (06) months as any type of cancer; aged 25 years or older; undergoing treatment such as chemotherapy or radiotherapy; able to understand Sinhala language and able to provide informed consent with sufficient physical and mental stability were the inclusion criteria. Patients with any surgical problems other than cancer related and in a critical state or end-stage of cancer or medical condition were excluded to prevent data collection burden. Cancer subjects were categorized into 10 groups according to their primary cancer site (e.g.

breast, lung, oral, colon and etc.), but 7 patients who did not fall into those 10 primary cancer groups were excluded from the final analysis according to the International Classification of Diseases -10 (ICD-10) (WHO-ICD, 2015).

Data were obtained over a period of nine-month (May 2013- January 2014) using interviewer-administered questionnaires (IAQs), bed head tickets (BHT) and the diagnosis cards of the patients. IAQ comprised eight scales that were used to assess different areas including family-social support (FS), religious support (RS), hospital in-patient environment satisfaction- support, depressive symptomatology, perceived stress, short-term psychological distress, quality of life and coping skills. Some of these scales have already been validated for Sri Lankan populations. Details of the 08 scales are provided below (Table 1).

For validation of the other scales, short-version of IAQ was administered to another set of cancer patients who planned for Radiotherapy (n=40) in two phases (phase 1 and 2) before initiating the main study using cross- cultural adaptation guidelines. All the scales which were to be validated [Multidimensional Scale of Perceived Social Support –MSPSS (Zimet, *et al.*, 1988), Religious support questions –RS (Balboni, *et al.*, 2007), and Brief COPE (Carver, 1997)] were given to 40 cancer patients. Additionally, data were collected for three scales [Center for Epidemiological Studies- Depression Scale -CES-D (Radloff, 1977), General Health Questionnaire –GHQ (Goldberg, 1985), and the World Health Organization- Quality Of Life-Brief -WHOQOL-BREF (WHO, 1998)] simultaneously for the validation process (to check convergent and divergent validity).

Data were analyzed using SPSS (Version 16.0). The reliability and validity of different scales were tested using Cronbach's alpha, test-retest reliability, and convergent and divergent validity techniques prior to the main study.

Cronbach's alpha of the MSPSS scale was 0.754 and the test-retest reliability was 0.866 ( $p < 0.01$ ). The expected correlation between MSPSS and CES-D scale were -0.459 ( $p < 0.01$ ). Also, MSPSS was positively associated with WHOQOL-BREF as expected (Weeratunga, *et al.*, 2018c). The reliability of the Brief COPE scale was 0.819 and the test-retest reliability was 0.664 ( $p < 0.01$ ). Brief COPE was inversely associated with CES-D scores ( $r = -0.234$ ;  $p < 0.01$ ); and positively associated with WHOQOL-BREF as expected (Weeratunga, *et al.*, 2018c). Cronbach's alpha of the RS scale was 0.874 and test-retest reliability was 0.981 ( $p < 0.01$ ); RS negatively correlated with CES-D ( $r = -0.338$ ;  $p < 0.05$ ) and positively correlated with WHOQOL-BREF as expected. Therefore, the three scales were found to be valid tools to measure family-social support, coping strategies and religious support in patients with cancer; the internal consistency, reliability, and validity of MSPSS, Brief COPE, and RS scales were at a satisfactory level to apply for the current study.

Therefore, the MSPSS was a reliable and valid instrument to measure family-social support (Weeratunga, *et al.*, 2018c). Several studies had shown that good psychometric properties of MSPSS in a different population (Guan, *et al.*, 2013; Talwar & Mohd Fadzil, 2013). Also, Brief COPE scale had good validity and reliability; used to measure coping strategies among cancer patients as similar to the previously measured psychometric studies (Carver, 1997).

Self-reported disabilities/impairment experienced by the subjects was assessed using 07 questions on walking, attending self-care, feeding, talking, hearing, vision, and involvement in household work due to the diagnosis and/or relevant cancer treatment-chemotherapy, radiotherapy, etc. The related questions and the scoring system were prepared by the author reviewing past literature; higher scores indicated greater impairments.

**Table 1:** Description of the scales

Scales	Items	Scoring method
MSPSS	12	Higher scores = higher FS
RS	9	Higher scores = higher RS
Cancer in-patient satisfaction with care questionnaire (EORTC IN-PATSAT 32) (Bredart, <i>et al.</i> , 2005).	32	Higher scores = higher satisfaction
CES-D	20	Higher DS = 16 or above
The Perceived Stress Scale (PSS) (Cohen, <i>et al.</i> , 1983)	10	Higher scores = higher PS
GHQ	12	Higher PD = more than 15 and 20
WHOQOL- BREF	26	Higher scores = higher QoL
The Brief-COPE scale	28	Higher scores = higher coping

Basic descriptive statistics were performed to describe the sample using SPSS. Chi-square test, independent t-test, and one-way analysis of variance (ANOVA) were used. Linear regression was used to identify relationships between dependent variables and independent variables. A probability value of 0.05 was considered as the level of significance.

Ethics approval for the study was obtained from the Ethics Review Committee, Faculty of Medicine, and the University of Ruhuna.

## Results

The mean age of the sample was 56 years (SD =11.92) (Table 2). More than half of the sample (59%) had an income of < SLR. 10000. The majority of the sample was from Galle district (45%), Sinhala and Buddhist.

The commonest cancer type was breast cancer (24%); the least common cancer type was lung cancer (6%). Nearly half of the patients with cancer had disabilities/impairments due to their disease (n=221, 56%) itself or interventions/treatments. Body changes/disfigurements were reported by 75% of the participants.

Severe PD was reported by 66% (n=266) of the study participants and elevated DS was found in 9 % (n=35). Overall mean psychological distress ( $\pm$ SD) was 22.72  $\pm$ 4.02 and mean CES-D score was 6.94 (SD=6.37). There were no significant differences in the levels of PD (p=0.06) and the presence of DS (p=0.95) among cancer groups.

**Table 2:** Socio-demographics of the sample (n =400)

Variables	Categories	n (%)
Age	< 55 Years	186(46)
	> 55 Years	214(54)
Sex	Male	164(41)
	Female	236(59)
Marital status	Married	327(82)
	Unmarried/ Single	73(18)
Educational status	No schooling	37 (9)
	Primary education (Grade 1-5)	101(25)
	Secondary education (Grade 6-10)	90(23)
	GCE O/L (up to O/L or pass)	105(26)
	GCE A/L- Graduate/diploma	67(17)
Household income level	Lower income ( $\leq$ SLR. 10000)	234(59)
	Higher income (> SLR. 10000)	166(41)

According to the scoring system and descriptive of different scales, participants reported receiving a high level of family support (FS) (71.47±11.16) and higher support from the significant others/special person (26.51± 4.35). Total religious support (RS) was at a higher level. An overall score of hospital support (HS) was 60.22± 6.13. The mean score of doctors' support (DSS) was 71.10±10 and higher compared to that of other subscales.

Overall QoL was at a moderate level (241.51±35.97); the majority of studied participants had reported moderate level scores for physical, psychological and environmental QoL domains whereas social QoL of the participants was at a lower level (48.06±14.67). The overall coping score was at a moderate level (63.50±7.22). Most of the participants (91%) had used adaptive coping methods (44.19±5.66) than maladaptive coping (19.31±2.42).

**Table 3:** Association between different psychosocial factors and domains of QoL

Factors	Physical QoL	Psychological QoL	Social QoL	Environmental QoL
PD	-.660**	-.651**	-.480**	-.442**
DS	-.516**	-.456**	-.455**	-.473**
Total FS	.057	.234**	.542**	.316**
Total RS	.065	.242*	.180*	.021
Total HS	-.034	.266**	.050	-.116*
Coping methods	.057	.290**	.283**	.088

p<0.05\*, p<0.01\*\*

Further association of all socio-demographic factors, PD, DS, support systems, coping strategies, and QoL were investigated; some variables are shown in above (Table 3). PD and DS were inversely associated with all domains of QoL. Among three supports, family-social support had a more significant impact on QoL domains of study participants rather than the religious support and hospital environment. Coping had a positive impact on QoL; coping affected to increase psychological and social QoL.

Age has shown a negative association with three QoL domains (p<0.01) except the environmental domain. Gender was related to the psychological (r=-0.110, p<0.05) and environmental QoL (r=0.106, p<0.05). Marital status was only related with social QoL (r=-0.150, p<0.01). Education and income were positively associated with four domains of QoL.

Disability levels were inversely related to all QoL domains. Cancer pain and body changes were positively associated with QoL domains significantly. Patients with cancer who had no disabilities, no body changes, and no pain scored higher QoL for all domains than the participants with disabilities, body changes and pain (p<0.01). Disabilities, body changes and cancer pain lowered the QoL of patients with cancer.

Regression analysis was done to find out associated factors of QoL (Table 4); family support and PD were found to be significantly associated factors of QoL. Religious support and hospital support showed a weak significant association with QoL.

**Table 4:** Associated factors of QoL of patients with cancer

<b>Depended variable : Total QoL</b>		
<b>Variables</b>	<b>F</b>	<b>p value</b>
Family- social support (FS)	35.939	.000
Religious support (RS)	3.362	.067
Hospital support (HS)	3.452	.064
Psychological distress	383.293	.000
Coping strategies	2.165	.142
Age	0.431	.512
Gender	1.027	.312
Time since diagnosis	0.377	.686

### Discussion

Psychosocial factors affecting cancer patients have been widely studied in other countries, but in Sri Lanka, there is a shortage of such information. Breast cancer was the most prevalent cancer type in this population and this observation was similar to the situation observed in other countries (IARC, 2010). In this study, the psychological burden was high among lung cancer (LC) patients as some studies reported (Zabora, *et al.*, 2001; Weeratunga, *et al.*, 2016); a study in Germany reported, distress prevalence in the sample in a range of 24% –59%. It also reported that the type of cancer was the main predictor of psychological distress (Herschbach, *et al.*, 2004). The previous study expressed that patients with lung cancer had reported a higher level of DS (57%) (Weeratunga, *et al.*, 2015; Yan *et al.*, 2019). Most demographics and clinical characteristics affected PD among study participants as elsewhere (Zabora, *et al.*, 2001; Herschbach, *et al.*, 2004). Moreover, PD and DS were associated with each other, indicated that having distress or depressive symptoms would impact the occurrence of DS or PD among patients with cancer.

Self-reported disabilities/impairments were common among the majority of patients in the current study; these lead to an increase in both PD and DS among cancer patients. Present findings revealed that physical limitations or disabilities which occurred due to the illness or side effects of treatment may have impacted the physical well-being of study subjects as found in the past (Valenti, *et al.*, 2008).

After the cross- cultural validation, three scales were used to measure important supportive services and coping methods in cancer patients in Sri Lanka. In the current study, family-social support was found to be higher in cancer patients than that of other supports; religious and hospital support they received was comparatively low. A study of disabled/wounded veterans in Sri Lanka had shown that family support and religious practices were higher among them (Zoysa & Wickrama, 2011); also, many supportive evidence reported in the study of ‘Tsunami affected in Sri Lanka’ (Hollifield, *et al.*, 2008); but more have explored in elsewhere (Naseri & Taleghani, 2012).

As one of the coping mechanisms, religion/spiritual support is very useful for individuals as well as family caregivers to tolerate cancer effects (Weaver & Flannelly, 2004). However, in the present study, religious support received by the affected cancer subjects was fairly low. It could be different due to the cultures and practices in different countries (Williams & Sternthal, 2007). In a study of Brazil, approximately, 99.6% of the patients reported that they need religious support during cancer treatment (Camargos, *et al.*, 2015). After gaining spiritual support, it would increase QoL and spiritual support was considered as the important aspect of end-of-life care (McClain, *et al.*, 2003; Balboni, *et al.*, 2007).

Satisfaction-with-care among patients regarding hospital environment or support from the hospital is not much focused in Sri Lanka. In the current study, hospital environment support seems to be relatively low compared to such support received by cancer patients in other countries, but the support given by doctors was higher than the support given by nurses (Weeratunga, *et al.*, 2019). Gynecological cancer patients had reported higher satisfaction with care and support from the health care professionals (e.g. - doctors, nurses, other services) (Philp, *et al.*, 2014). Similar to us, the satisfaction of patients may increase due to hospital support; affect early recovery (Zhang, *et al.*, 2014). Cultural differences may also have an impact on the satisfaction of patients who were from a different country or region (Zhang, *et al.*, 2014).

Among coping methods, adaptive coping strategies were highly used by patients with cancer than maladaptive coping methods. It was confirmed by previous studies and similar to our findings. According to the biochemical changes in the human body, adaptive methods were healthier to body mechanism than maladaptive methods such as avoidance coping and substance use (Taylor, 2006); instrumental support and emotional support were commonest coping strategies here it is similar to published studies (Yusoff, *et al.*, 2010). Moreover, religion had better impact on coping among our patients in line with other findings (Balboni, *et al.*, 2007; Balboni, *et al.*, 2010). Aging caused to reduce coping, higher education increased coping, increased disabilities lowered coping among patients with cancer. Furthermore, three support systems had an impact on higher coping scores (e.g.-family- religion, and hospital support). Due to the psychological impairments of most patients with cancer, stress would appear and use as negative coping methods. Therefore coping ability of the study participants could be influenced by negative psychological health status like PD and DS (Zabora, *et al.*, 2001).

The moderate level of overall QoL was perceived by current study participants; social QoL of them was lower. 'QoL' is a crucial aspect of cancer management in most countries, but the situation is different in Sri Lanka. Most socio-demographic and clinical characteristics correlated with QoL among patients with cancer (WHOQOL, 1998; Ahlberg, *et al.*, 2004). In a study conducted in Brazil, patients with Oostomized cancer had scored higher physical QoL (64.33±22.92), psychological (68.69±18.98), and social QoL (61.94±23.49) (Pereira, *et al.*, 2012). Younger patients had reported the highest QoL (e.g.-physical, psychological, and social) in this study indicated that young age consisted of more positive aspects in life (e.g.-best ADL, energy, positive feelings, personal relationships, sexual performances) (WHOQOL, 1998; Ahlberg, *et al.*, 2004). Elder patients were unable to maintain these aspects and could be reduced QoL like in the findings of this study. Moreover, psychological distress and depressive



symptoms lower the QoL, but social support and coping caused to increase the QoL (Weeratunga, *et al.*, 2018a). Finally, PD and family-social support were found to be significant predictors of QoL among current study participants.

The results of this study may not be generalizable to all hospitals/settings in Sri Lanka, since data were only gathered from one tertiary care hospital setting, but the higher number sample size would be increased the generalizability. Limited time frame, inadequate facilities, and uncomfortable environment, higher numbers of patients and busy ward routine may have affected the smooth process of data collection. Patients who were in age below 25 years were excluded, assuming these groups of patients were having problems in expressing their coping and support information properly. Also to reduce data collection burden, critically ill and mental instability patients were excluded though they present with different psychological imbalances due to another cause. There are a limited number of research studies on cancer available in Sri Lanka. Therefore comparisons of results of the current study were limited.

### **Conclusions**

Breast cancer was the most common cancer. The majority reported psychological distress, but a lower percentage of elevated depressive symptomatology. Psychological support services that available in the hospital setting were grossly inadequate. This study revealed that a moderate level of QoL was perceived by study participants, but received social QoL was lower among them. Moreover, psychological distress and depressive symptoms lower the QoL, but social support and coping caused to increase the QoL.

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