

RESEARCH ARTICLE

HOPE AND HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH CANCER UNDERGOING ADJUVANT THERAPY

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Abstract

Purpose: Cancer constitutes a public health concern and has been an evident universal health problem for the past decade. New treatment options with the goal of finding an absolute cure for the disease are explored by the medical society. This study aims to examine the Health-Related Quality of Life and levels of hope among patients with cancer undergoing adjuvant therapy, and to determine the relationship of these variables, their domains and subscales.

Methods: The study used a descriptive, cross-sectional, correlational research design. Ninety two respondents from Porac, Pampanga, aged 18 and above, diagnosed with cancer, and are undergoing adjuvant therapy were selected via consecutive sampling. Two instruments were utilized in the study: the EORTC QLQ-C30 and the Herth Hope Index. Pearson's *r* with a *p*-value set at <0.05 was used to establish the relationship between the aforementioned variables. The principles of voluntary participation, confidentiality and anonymity were given due recognition in the study.

Findings: Results revealed that over a half of the respondents (53.26%) have high HRQoL scores (mean of 68.5) in the EORTC QLQ-C30 questionnaire. On the other hand, the overall level of hope based on the Herth Hope Index was 33.32, which was generally acceptable, where 66.30% of the scores were considered high. Domains of HRQoL namely physical functioning, role functioning, emotional functioning, cognitive functioning and social functioning were all positively correlated with hope subscales specifically: temporality and future, readiness and expectancy and interconnectedness at varying strengths.

Conclusions: A diagnosis of cancer does not equate to one's loss of hope. Hope may be anchored in Health-Related Quality of Life which involves different domains rather than in the form of treatments for cure. Further studies which focus on comparing outcomes of patients who decline and those who willingly undergo adjuvant therapy, a repeated measures study to determine continuum levels and lastly, an intervention study focusing on symptom management may be done to gain more in-depth information regarding the effects of adjuvant therapy on the HRQoL and level of hope among these patients.

Keywords: Hope, health-related quality of life, adjuvant therapy, cancer

Introduction

Cancer is a public health concern which acquired its broader dimension as a universal health problem over the past decade. According to the World Health Organization (2015), it is the second leading cause of mortality which accounts for 8.8 million deaths globally, approximately 70% of which occurs in low to middle income countries such as the Philippines. Its burden further ensues as the projected incidence is estimated to rise up to 23,980, 858 by the year 2035 (Ferlay, et al., 2013). In an attempt to halt the daunting phenomenon, extensive researches are conducted to determine the etiology, risk factors, prevention methods and new treatment options for cancer. Emerging evidence suggests the use of adjuvant therapy in the

management of the disease due to its potential to combat cancer and lower the chances of relapse. These efforts to produce positive outcomes are geared towards the improvement of health-related quality of life. Nevertheless, patients diagnosed with cancer still feel frustrated and devastated because of the discomforts accompanying the disease and the fear of an uncertain future. Hence, maintaining a sense of hope, which is considered as an effective coping strategy to facilitate recuperation, continues to be a struggle. The optimism that the medical breakthrough is expected to bring seems to be dampened by the patient's perception on health and well-being.

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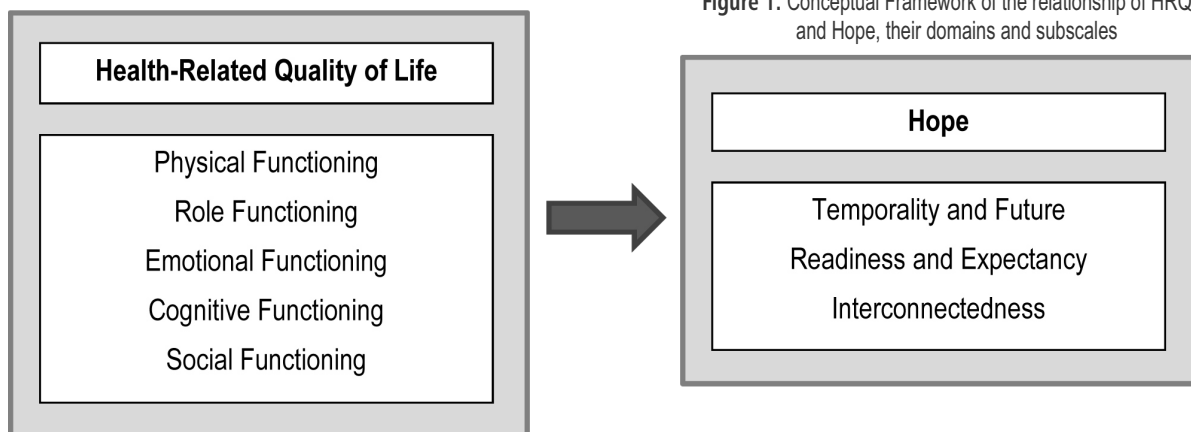


Figure 1. Conceptual Framework of the relationship of HRQoL and Hope, their domains and subscales

Although researches have explored HRQoL and hope in patients with cancer, these concepts are most often studied independently, conversely the few who ventured to determine relationships had conflicting results. Therefore, the potential association of each concept remains unestablished.

This study aims to examine the HRQoL and levels of hope among patients with cancer undergoing adjuvant therapy, and to determine the relationship of these variables, their domains and subscales. In this study, it is hence hypothesized that there is a positive correlation between HRQoL and the level of hope of the respondents.

Methodology

Design

The study used a descriptive, cross-sectional, correlational research design to best answer the objectives of the study. A description of the sample, their quality of life and levels of hope, and the relationship between these variables were identified at one point during the treatment course.

Participants

A total of 92 respondents, aged 18 and above, diagnosed with cancer and are currently undergoing any adjuvant therapy within the registry of Porac, Pampanga, participated in the study. They were alert, oriented, and aware of their diagnosis and prognosis. Patients who experienced burden and those with uncontrolled symptoms, such as difficulty of breathing and pain were excluded from the study.

Sampling Procedure

Due to the uncertainty of the availability of qualified participants at the time of data collection, a consecutive sampling design was utilized in the study. This sampling technique assisted the investigator in gaining the maximum number of respondents who met the inclusion criteria within a time frame of 2 months.

Research Instruments

Two instruments were used in the study: the EORTC QLQ-C30 and the Herth Hope Index. The European Organisation for

Research and Treatment of Cancer (EORTC) Quality of Life Group grants permission to use its questionnaire for free as long as it is used for academic researches (Aaronson, et al., 1993). A written permission was secured from the author of the Herth Hope Index (Herth, 1991), Kaye Herth, via electronic mail. Both were made available in English and Filipino, and were administered depending on the preference of the respondent.

Data Collection Procedure

Data collection began after securing a formal letter of approval from the Municipal Health Officer of Porac, Pampanga. Records of cancer patients within the area were then compiled and the respondents who met the inclusion criteria were listed. The investigator, with the assistance of several barangay health workers, conducted home visits and administered the questionnaires to the respondents. The instruments were personally distributed by the investigator to ensure completeness as well as to guarantee that the respondents met the criteria set for the study. The respondents were given a maximum of 30 minutes to complete the questionnaires prior collection.

Data Analysis

Frequency, percentage and distribution were used in describing the sample, their quality of life and levels of hope. Demographic variables set for this study are: age, sex, educational attainment, religion, race/ethnicity, the type, stage and the treatments for cancer, and the length of time since the diagnosis

Computations for the scores of HRQoL and hope were based on the scoring manuals provided by each questionnaire package. Pearson's r , a bivariate correlation test, with a statistical significance of $p < 0.05$, was used to establish the relationship between the aforementioned variables. Further, different domains and subscales of both health-related quality of life and hope were also tested for possible correlation.

Ethical Considerations

In this study, ethical considerations that the contemporary social and medical research establishments have created to safeguard the rights of the participants, were given due recognition. The

respondents were not coerced in participating in the study and were allowed to refuse even when they have started answering the questionnaire to honor the principle of voluntary participation. Procedures and risks were explained prior to data collection and were stipulated in the cover letter attached to the questionnaires. Also, the demographic data form did not include any identifying information which may separate participants from others, such as the name and address, to assure confidentiality and anonymity.

Results

Demographic Variables

Majority of the patients (54.35%) were male, aged 19-81 years, with a mean age of 50, college graduates (43.48%), Catholics (66.30%), and are all Filipino. Nasopharyngeal cancer at stage III was the most common cancer, accounting for 7.61% in all the patients. All of the respondents have undergone chemotherapy, over half had surgery (51.1%), and majority had radiation (95.65%) as an adjuvant therapy. The time since the diagnosis of cancer ranged from 1 to 22 months, with a mean of 8.

Health-related Quality of Life

Table 1. Health-Related Quality of Life and Domain Scores

Domains	Mean Score	Standard Deviation
General and Functional Scales		
Physical Functioning	58.33	34.64
Role Functioning	58.16	35.35
Emotional Functioning	56.52	37.69
Cognitive Functioning	52.90	42.41
Social Functioning	56.16	35.35
Symptom Scales		
Fatigue	44.81	36.74
Nausea and Vomiting	43.84	35.35
Pain	39.85	34.32
Dyspnea	46.74	41.07
Insomnia	46.74	41.07
Loss of Appetite	38.77	38.37
Constipation	47.46	46.68
Diarrhea	40.94	34.98
Financial Difficulty	38.77	38.37
Global Health Status	68.50	18.76

The Health-Related Quality of Life and domain scores for the EORTC QLQ-C30 scales are presented in Table 1. The respondents predominantly scored a high level of HRQoL (53.26%), and only a fewer percent were attributed to low scores (17.39%). The average of the Global Health Status which depicts the HRQoL score was 68.5 (SD 18.76) and the scores for the

physical, role, emotional, cognitive and social functioning varied from 52.90 to 58.33, representing a satisfactory result.

The symptom scales showed that constipation, accounting for a mean of 47.46 (SD 46.68), was the most frequently reported consequence accompanying adjuvant therapy. On the other hand, loss of appetite and financial difficulty were the least concerns of the respondents while undergoing treatment.

Level of Hope

Table 2. Level of Hope and Subscale Scores

Subscales	Mean Score	Standard Deviation
Temporality and Future	10.72	2.50
Readiness and Expectancy	11.96	3.31
Interconnectedness	10.87	2.36
Level of Hope	33.32	7.64

Legend:

Subscale	Score Range	Interpretation	Level of Hope	Score Range	Interpretation
	10-12	High		36-48	High level of hope
	7-9	Moderate		24-35	Moderate level of hope
	4-6	Low		12-23	Low level of hope

Analysis of the Herth Hope Index as presented in Table 2 shows a generally acceptable level of hope (33.32) among the respondents. Majority (66.30%) of the respondents had high levels of hope and a few percent (14.13%) had low scores.

The three subscales scores ranged from 10.72 to 11.96 indicating a moderate level of hope. Mean scores for the questionnaire on hope ranged from 2.42 to 3.14, indicating a general agreement to the statements. Reverse scored items, numbers 3 and 6 respectively, also gained the same results. The highest among the scores is attributed to the subscale readiness and expectancy and belongs to the item that states life has value and worth.

Relationship of Health-Related Quality of Life and Level of Hope, Domains and Subscales

Pearson's *r* was used to determine the correlation between the HRQoL and the level of hope, domains and subscales. All HRQoL variables tested showed a positive correlation with hope and its subscales at varying strengths (see Table 3). Global Health Status is positively correlated with the level of hope ($r=0.57$, $p=.001$) at a moderate level. This same is true for all the HRQoL domains with the hope subscale temporality and future. On the other hand, all HRQoL domains correlated with the hope subscales readiness and expectancy and interconnectedness showed strong positive correlations.

Discussion

Health-Related Quality of Life and levels of hope of patients with cancer undergoing adjuvant therapy were determined in the study from 92 respondents of Porac, Pampanga. Over a half of

Table 3. Relationship of HRQoL Domains and Hope Subscales

HRQoL Domains			Hope Subscales			
	Temporality and Future		Readiness and Expectancy		Interconnectedness	
	<i>r</i>	<i>p-value</i>	<i>r</i>	<i>p-value</i>	<i>r</i>	<i>p-value</i>
Physical Functioning	0.57	.001	0.74	.001	0.70	.001
Role Functioning	0.59	.001	0.74	.001	0.72	.001
Emotional Functioning	0.57	.001	0.75	.001	0.71	.001
Cognitive Functioning	0.57	.001	0.74	.001	0.67	.001
Social Functioning	0.59	.001	0.74	.001	0.72	.001

the respondents had high levels of HRQoL (53.26%) and levels of hope (66.30%). The most common symptom accompanying adjuvant therapy was also identified, constipation (47.46%) being the most frequent among the respondents. On the other hand, loss of appetite and financial difficulty were the least among the concerns. This research was also able to find significant positive relationships between HRQoL domains namely, physical, role, emotional, cognitive and social functioning; and hope subscales: temporality and future, readiness and expectancy and interconnectedness specifically.

Health-Related Quality of Life

The EORTC QLQ-C30 mean score of the respondents was reflected in the Global Health Status score which was 68.5 and is considered average. Over a half of the total number of respondents (53.26%) scored as high as 100 in the questionnaire. In addition, it is noted that the respondents were able to interact with the investigator in a meaningful way and were pain and symptom free at the time of data gathering. Earlier studies (Echteld, van Zuleyn, Bannik, Witcamp & Van der Rijt, 2007; Mytsakidou, et al., 2009; Green, Montague & Hart-Johnson, 2009; Geisinger, et al., 2011; Hermann & Looney, 2011; Roe, Leslie & Drinnan, 2011; Shahmoradi, Kandiah & Peng, 2009) have highlighted the negative impact of pain and the presence of other symptoms as negatively affecting HRQoL, hence absence of these may be contributory to the overall satisfactory scores. Further, the relatives of those who willingly participated may have provided excellent social support and overall care. Previous research (Sammarco & Konecny, 2008) indicated that the company of reassuring relationships during the cancer experience has been associated with better HRQoL. These circumstances may have influenced the high levels of health-related quality of life in the respondents.

Level of Hope

The level of hope was determined through the Herth Hope Index, a self-report 12-item questionnaire. The mean of the total scores was 33.32, and 66.30% of the scores were considered high. This is in contrary to what is expected when a person is faced with a terminal disease. Hence, this supports the theory of Dufault and Martiocchio's (1985) model of hope which postulates that hope is

a constant trait that is present on two levels, particularized hopes and generalized hopes. Particularized hopes are those which are time-bound and are directed towards the attainment of the future good. Generalized hopes are of the opposite, which means that it comes from the inner source and does not depend on the biophysical model of medicine's ability to cure or not. The abovementioned model posits that when particularized hopes are not attained, generalized hopes remain and continue, hence allowing the person to cope up with the stress of having an illness without an absolute cure such as cancer. On the other hand, other authors such as those of Rustoen in 1998 have defined hope as an indication of denial, a coping mechanism for people dealing with losses associated with such a disease. It is noteworthy that respondents for this research were screened by the investigator for their awareness of their diagnosis and prognosis and all clearly stated that they were cognizant of their condition.

It is also important to note that all respondents are of the same nationality. Filipinos are known to be resilient which enables them to withstand even the strongest calamities and hence may be contributory to the high levels of hope. The respondents, who reside at Porac, Pampanga were also most likely the people who have experienced the Mt. Pinatubo eruption which is considered to be the second largest volcanic eruption of the century. This calamity was known to have caused a number of mortality and destruction of facilities and establishments among the people in the year 1991. Although this has left the people devastated, they eventually coped up, even making use of the funds generated from selling volcanic ashes to rebuild the town.

Health-Related Quality of Life and Domains, Hope and Subscales

The positive correlation between the HRQoL and level of hope was statistically significant at a moderate level. More so, it was found in the study that all domains have significant relationships with all the subscales of hope. This means that as a person's HRQoL improves, it is more likely that the level of hope increases, which applies to the domains and subscales of each construct. This is in congruence with the findings of earlier intervention studies (Herth & Cutcliff, 2002; Penson, 2000) which have also identified strong positive relationship between these variables

and suggest that both improve following an intervention. Thus, hope may buffer against decreased HRQoL and so be regarded as a personal resource (Esbensen & Thomsen, 2011) and an important coping mechanism for patients diagnosed with a terminal disease (Farone, Fitzpatrick & Bushfield, 2008; Smedema, Catalano & Ebener, 2010).

The domain and subscale combination with the strongest correlation is emotional functioning and readiness and expectancy ($r=0.75$, $p=0.001$). The items within the domain of emotional functioning included questions addressing anxiety, irritability and depression. On the other hand, readiness and expectancy comprise of items discussing possibilities amidst difficulties, inner strength, sense of direction and value of life. Though this study did not assess whether each patient had forms of emotional counselling, the high hope scores may be explained by the presence of significant others who may have influenced the emotional disposition and overall health, enhancing the process of coping up with the illness (Johnson, 2007). Interpersonal relationships with friends and family have been identified to help terminally ill individuals to feel that their life has order and purpose, thereby negating the existential challenges created by a terminal diagnosis (Lee, 2008; Folkman & Greer, 2000).

An example of how emotional functioning items were observably interrelated with those of readiness and expectancy was during data collection. While a respondent was answering the question regarding having a sense of direction and value in life, he acknowledged his wife for counselling him to relieve his anxiety especially during the first few days of being diagnosed with cancer. He mentioned about how he managed to have emotional stability and finally see that his life may be redirected by God to serve a purpose, with the help of his wife. This backs the findings of existing researches (Holtslander, Duggleby, Williams & Wright, 2005; Kirk, Kirk & Kristjanson, 2004; Clayton, et al, 2007) that hope may be fostered through communication with a significant other. Poor communication on the other hand has been found to have significant untoward psychosocial sequelae (McClement & Chochinov, 2008). Therefore, efforts aimed at improving communication, in addition to enhancing the effectiveness of the clinical encounter, may help support patient hope as well.

Limitation

In this study, a few limitations were noted. First, the sample consisted of a convenience sample of patients with cancer who are stable enough in their disease process to participate in answering questions. This suggests that those who participated may have always maintained high levels of hope in the face of difficulties and that they were prepared to discuss difficult issues due to a consistent level of hopefulness in the face of difficulties. This also suggests that those patients who were not prepared to discuss quality of life and hope and who were generally less hopeful were the patients who did not agree to participate in the

study. The issue of subject burden was considered since a number of qualified respondents were too either too weak or they experience fatigue easily (Dean & McClement, 2002). Lastly, 92 respondents will not be enough to represent the totality of patients with cancer undergoing adjuvant therapy in the Philippines.

Conclusion and Recommendations

It may be concluded from the results of this research that a diagnosis of cancer does not equate to one's loss of hope. Hope may be anchored in health-related quality of life which involves different domains such as the physical, role, emotional, cognitive and social functioning, rather than in the form of treatments for cure.

Although the study had important findings, further research is needed. A study that compares patients who decline adjuvant therapy and those who willingly undergo such treatment could provide more information regarding the effect of adjuvant therapy on the HRQoL and level of hope among these patients. In addition, a repeated measures study could be designed to follow these patients weekly to determine continuum levels of HRQoL and hope over time. Finally, an intervention study focusing on symptom management could be implemented in a hospital setting, if warranted. The intervention would include a standardized care plan designed especially to provide guidelines for nurses assigned to these types of patients. The purpose of this study would be to provide a tailored and guided care plan for patients experiencing a specific type of symptom.

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As a nurse, we have the opportunity to heal the heart, mind, soul and body of our patients, their families and ourselves.

They may forget your name, but they will never forget how you made them feel.

- Maya Angelou