

# Influence of Gender Differences on the Perception of Quality of Life Among Oncology Patients: A Review

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DOI: <https://doi.org/10.52403/ijshr.20230446>

## ABSTRACT

This review article aims to investigate how gender differences alter the perception of quality of life among oncology patients. The studies which assessed the quality of life of patients with cancer among different genders were selected. The results show differences in perception of quality of life with respect to gender which can be attributed to many reasons. Gender differences secondary to the genetic or molecular level significantly impact the perception of quality of life and other related factors.

**Keywords:** Gender differences, Perception, Quality of life, Oncology patients

## INTRODUCTION

Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020, or nearly one in six deaths. The most common cancers worldwide are breast, lung, colon, rectum, and prostate cancers<sup>1</sup>. Although Indian studies show a higher prevalence of head and neck, cervix, and breast cancers. The diagnosis of cancer itself affects all the dimensions of quality of life. Studies suggest that the quality of life is affected by the coping strategies employed. Patients with recently discovered terminal cancer employ a range of coping mechanisms. The study by Nipp RD et al.<sup>2</sup> showed that better quality of life and mood

were associated with the use of positive coping mechanisms such as emotional support and acceptance, whereas these outcomes were adversely associated with the use of self-blame and denial<sup>2</sup>.

Coping strategies influence patient's self-efficacy and adjustment to disease and treatment<sup>3</sup>. The choice and employment of specific coping mechanisms may change patients' views of their condition and treatment choices, which may have a long-lasting effect on the course of their care and ultimately influence their quality of life<sup>16</sup>. In general, approach-oriented coping strategies have been associated with a better quality of life and less psychological distress, whereas avoidant coping strategies have been inversely correlated with these outcomes<sup>2</sup>.

Studies also suggest that men cope with a cancer diagnosis differently than women. In most cases, women are more open to revealing and communicating their emotions than men and cope better with a cancer diagnosis for themselves and their loved ones.

Numerous research has been conducted to examine the various elements affecting the quality of life. However, few research has looked at it from the standpoint of gender. The findings of this review may reveal gender-related interactions between the several domains that will be useful for

treatment planning. The prognosis, location, and kind of cancer may all affect the quality of life.

## METHODS

To gather information related to the gender differences pertaining to the perception of quality of life among different types of cancer, a literature review using a search of electronic databases was conducted. Related studies could be included in the analysis, through footnote chasing. An advanced methodological search strategy was used to search the articles in PUBMED: gender differences AND quality of life, AND oncology patients, OR cancer patients. Many studies were found and chosen based on criteria like research-based studies, studies written in the English Language, and free full text. The qualitative research and studies that required purchase were excluded. Overall, eight studies published between 2008 to 2021 were selected and formed the basis of this review.

### Methodological Characteristics

All seven studies were quantitative studies with due IEC clearance. Most of the studies

were cross-sectional while others were descriptive, and some used interviews and/or self-reported questionnaires. The common instruments used for data collection were a 12-item Short Form Health Survey (SF-12), Skindex-29, EORTC QLQ-C30, Body Image Scale (BIS), Rosenberg Self-Esteem Scale (RSES), Social Interaction Anxiety Scale (SIAS), Depression Anxiety Stress Scale-21, Brief pain inventory, Lee Fatigue Scale (LFS), The Center for Epidemiological Studies e Depression Scale (CES-D), The Multidimensional Quality of Life Scale e Cancer (MQOLSCA), Ostomy Adjustment Inventory-23 (OAI-23), etc. The range of sample size for the studies ranged from 51 – 1338 cancer patients which included all the genders from different age groups across the globe. The descriptive and statistical analysis was done using the IBM Statistical Package for the Social Sciences (SPSS) and other software products.

## RESULTS

The table 1 below shows the scores pertaining to different genders taken from different studies included.

	MEN	WOMEN	STUDIES
<i>PAIN</i>	48.10 ± 33.40	<b>56.25 ± 33.39</b>	Langhousi D et al
	234	<b>389</b>	Lewandowska A et al.
	1.3 ± 1.3	<b>2.0 ± 1.7</b>	Pud D.
<i>FATIGUE</i>	51.37 ± 31.77	<b>58.98 ± 32.01</b>	Langhousi D et al
	<b>3.7 ± 1.9</b>	3.6 ± 2.1	Pud D.
<i>SELF ESTEEM</i>	<b>34.63 ± 3.57</b>	29.14 ± 2.48	Cerea et al
<i>DEPRESSION</i>	9.26 ± 4.54	<b>9.75 ± 5.60</b>	Singh RPB et al
	17.9 ± 7.3	<b>19.6 ± 10.3</b>	Pud D.
<i>ANGER</i>	5.11 ± 1.62	<b>5.25 ± 1.59</b>	Gautam S et al.
<i>ACCEPTANCE</i>	20.58 ± 7.30	<b>22.83 ± 6.23</b>	Gautam S et al.
<i>ANXIETY</i>	<b>5.88 ± 4.62</b>	5.25 ± 3.63	Singh RPB et al.

Table 1: Scores of dimensions pertaining to gender differences taken from various studies

## DISCUSSION

Cancer diagnosis effects on life have various influence factors; one of them is symptom burden which differs according to the type of cancer. Lung cancer patients present with symptoms of breathlessness, coughing, pain, and fatigue whereas head and neck cancer patients have symptoms of

odynophagia, dysphagia, and chronic hoarseness of voice. Among females, the incidence of cervical cancer has proven to influence the quality of life. Unmarried or widowed women often experience more emotional distress than married women. With a teeming rise in the incidence of prostate cancer, a study showed how illness

perception was inversely associated with the quality of life. These issues affect the coping strategies among different genders, altering their quality of life<sup>3</sup>.

The City of Hope Model states that quality of life has four dimensions: physical well-being and symptoms, psychological well-being, social well-being, and spiritual well-being. The ability to control or relieve symptoms, maintain physical independence, and do all necessary tasks are all considered to be components of physical well-being<sup>4</sup>.

Maintaining a sense of control in the face of disease, which is characterized by altered life priorities, emotional adjustment, and handling the fear of the unknown with the transitions in functions and goals is what psychological well-being generally refers to. The effects of cancer on people, their roles, responsibilities, and connections, and how well they can handle those variables, affect social well-being. Coping skills influence emotional and social well-being which was seen in a study done among 125 patients with advanced lung cancer who used positive reframing as a coping strategy and in turn experienced a higher quality of life. The patients who used reframing had less anxiety and depressive symptoms<sup>5</sup>. Spiritual well-being depends on how well an individual can control uncertainty around the cancer disease trajectory.

Based on the analysis of the selected studies the effects were mainly on the physical and psychological dimensions of life. One of the most prevalent complaints among cancer patients is pain. **Pain and discomfort** can be secondary to tumors, surgery, chemotherapy administered intravenously, radiation therapy, targeted therapy, supportive care treatments such as bisphosphonates, and diagnostic tests. A review article was written by Bianchini et al. to investigate the role of gender in the perception and tolerance of pain in head and neck cancer patients. Based on the different articles that were reviewed, pain specifically seemed to be more in women compared to men. They further researched certain other factors that could have led to the gender

difference like the influence of sex hormones, previous experiences, occupational roles, and biopsychosocial factors as well. A phenomenon called catastrophism had also been found to be more in women than in men<sup>6</sup>. Major oncological operations can cause considerable post-operative pain that is sometimes difficult to manage. When it comes to post-operative pain which persists despite the standard post-operative analgesia, women were reported to experience intense pain more than men<sup>15</sup>.

In a study done by Langhousi D et al, among 303 colorectal cancer survivors to assess gender differences in health-related quality of life among patients. The mean score of pain for men was  $48.10 \pm 33.40$  and for women was  $56.25 \pm 33.39$ <sup>7</sup>. Similar findings were seen in another study done to assess the quality of life of cancer patients treated with chemotherapy which showed 389 women experienced pain whereas only 234 men did among 800 samples<sup>8</sup>. A study was done to assess the quality of life of oncology patients among 114 outpatients out of which females had a mean score of  $2.0 \pm 1.7$  and males  $1.3 \pm 1.3$  showing the least pain intensity. Also for the average and worse pain intensity, the mean scores of females were greater than that of men<sup>9</sup>.

**Fatigue** secondary to cancer-associated symptoms can have a significant impact on one's quality of life. Cancer-related fatigue is distinct from ordinary exhaustion, which is typically transient and improves with rest. The fatigue typically does not improve with sleep or rest. It may be severe and protracted<sup>17</sup>. In a study conducted by Koch et al.2020, the analysis showed statistically significant differences in two scales: cough severity, higher in men, and diarrhea, more in women. With respect to the intensity of symptoms, fatigue was more evident in women than in men ( $51.32$  and  $51.29$ ) and dyspnoea<sup>10</sup>. A similar finding was elicited in another study where the mean was  $58.98 \pm 32.01$  for women and  $51.37 \pm 31.77$  for men among 303 colorectal cancer patients<sup>7</sup>. A quite contrary finding was elicited in a study

done among 114 oncology patients which showed the women had a mean score of  $3.6 \pm 2.1$  which was less than that of men whose mean score was  $3.7 \pm 1.9$  assessed using the Lee Fatigue Scale – LFS<sup>9</sup>.

The other dimension that was altered in most of the cancer patients was the **psychological domain**. Cancer has several mental and emotional side effects, much like any ailment that affects your capacity to carry out regular tasks. The most prevalent psychological complication that cancer patients experience is depression. **Depression** directly influences the quality of life of these cancer patients. Sampogna et al. conducted a study on patients with Keratinocyte Carcinoma to assess the sex-specific differences in health-related quality of life. The women reported high levels of worry and depression. It showed that women scored less in health-related quality of life compared to men, in the physical and mental components<sup>11</sup>. A prospective non-interventional observational study was done in a tertiary care center in the Malwa region of Punjab to analyze and compare depression, anxiety, and stress levels of cancer patients. Among 300 patients 166 were male and 134 were female. The mean score of depression for men was  $9.26 \pm 4.54$  compared to which the women had a higher mean score of  $9.75 \pm 5.60$ <sup>12</sup>. A similar finding was found in a study done by Pud D. among oncology outpatients in Israel in whom the depression was assessed using The Center for Epidemiological Studies e Depression Scale (CES-D) which comprised 20 items. The females had a mean score of

$19.6 \pm 10.3$  more than that of men who had  $17.9 \pm 7.3$ <sup>9</sup>.

Cancer patients also **have low self-esteem** secondary to the bodily changes that occur due to many treatment strategies which results in body image distress<sup>18</sup>. Studies have been done to explore the relationship between quality of life and body image distress in patients, one of which showed that females scored higher than males pertaining to most of the psychological variables. A self-reported questionnaire was used to assess body image stress, physical and mental quality of life, and psychological variables. Females also showed lower mental quality of life and self-esteem compared to males. Gender differences in self-esteem secondary to body changes also influence the perception of quality of life. Studies have been done to explore the relationship between quality of life and body image distress in patients, one of which showed that females scored higher than males pertaining to most of the psychological variables. A self-reported questionnaire was used to assess body image stress, physical and mental quality of life, and psychological variables. Females also showed lower mental quality of life and self-esteem compared to males<sup>13</sup>.

Another study done by Gautam S and Pudel A. on the effect of gender on the psychosocial adjustment of colorectal cancer survivors showed that both genders had significant impairment in psychosocial adjustment. The table 2 below shows the difference among the genders in different psychosocial domains<sup>14</sup>.

Table 2 Psychosocial adjustment by gender (n=122)

Patient characteristics	Men (n=62), mean ± SD	Women (n=60), mean ± SD	t	P value
Overall mean score	37.68±12.96	43.45±12.81	-2.472	0.015*
Subscales				
Acceptance	20.58±7.30	22.83±6.23	-1.830	0.070
Anxious preoccupation	8.03±3.92	9.07±3.60	-1.515	0.132
Social engagement	3.95±2.95	6.30±3.38	-4.091	<0.001*
Anger	5.11±1.62	5.25±1.59	-0.471	0.638

Test statistics: t-test. \*, P value significant at  $\leq 0.05$  level.

Source: Gautam S, Poudel A. Effect of gender on psychosocial adjustment of colorectal cancer survivors with ostomy. Journal of Gastrointestinal Oncology.

The mean scores of the women overall as well as the subscales were more than that of men. Further analysis in this study also reported that men reported more negative emotions than women.

## CONCLUSION

The incidence of cancer and its associated distress is increasing very rapidly which makes it important for healthcare professionals to understand the gender differences that persist which play a major role in defining their quality of life. Though extensive research has been done in the field of oncology, studies related to gender differences and their influence on quality of life are few. There is a need to explore how men and women differ on different levels. Understanding these differences will help us to customize the treatment strategies based on gender. There is a wide variety of interventions available, but they may not have the same desired effect on different genders if it is not tailor-made as per the need of the recipients.

It is well known that quality of life determines the treatment outcome or prognosis of the patient. Therefore, it is very important to explore the differences in terms of gender needs so that the interventions can be framed for the desired recipient group. Understanding this and considering useful evidence-based approaches while planning the care and treatment for cancer patients will help in promoting their quality of life.

## Declaration by Authors

**Ethical Approval:** Not Required

**Acknowledgement:** None

**Source of Funding:** None

**Conflict of Interest:** The authors declare no conflict of interest.

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How to cite this article: Rukshar Bano, Bindhu Mathew, Nandini Vallath, Sherina Koshy. Influence of gender differences on the perception of quality of life among oncology patients: a review. *International Journal of Science & Healthcare Research*. 2023; 8(4): 333-338. DOI: [10.52403/ijshr.20230446](https://doi.org/10.52403/ijshr.20230446)

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