

# Gender Differences in the Use of Engagement and Disengagement Coping Strategies in Patients With Cancer Receiving Chemotherapy

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**OBJECTIVES:** To evaluate the relationship between gender and coping strategies in patients with cancer undergoing chemotherapy in outpatient settings.

**SAMPLE & SETTING:** Women (N = 277) and men (N = 293) were recruited from two comprehensive cancer centers, one Veterans Affairs hospital, and four community-based oncology programs.

**METHODS & VARIABLES:** Coping data were obtained from patients with gastrointestinal (n = 412) or lung (n = 158) cancer through the Brief COPE scale.

**RESULTS:** In terms of engagement coping strategies, women reported higher scores for positive reframing, religion, and using instrumental support. Men reported higher scores for humor. In terms of disengagement coping strategies, women reported higher scores for denial, venting, and self-distraction. Men reported higher scores for substance use.

**IMPLICATIONS FOR NURSING:** Gender-based stereotypes of emotional expectations may affect how patients express themselves and the ways in which support is offered. Clinicians should be aware of their own preconceived notions about sex and gender and reflect on how these may influence the psychosocial care they provide.

**KEYWORDS** gender; coping; chemotherapy; cancer; engagement strategies; disengagement strategies  
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Although approximately equal numbers of women and men will be diagnosed with lung and colorectal cancers (Siegel et al., 2019), women have historically been underrepresented in lung and gastrointestinal (GI) cancer research (Hoyt & Rubin, 2012). In contrast, regardless of cancer site, men have been underrepresented in studies that focus on psychosocial issues associated with a cancer diagnosis and its treatment (Hoyt & Rubin, 2012). This unequal representation leaves significant gaps in the knowledge of differences in the ways that women and men cope with the diagnosis of and treatments associated with lung or GI cancers (i.e., two cancers that have equal occurrence rates in men and women) (Siegel et al., 2019). Previous research found that the use of specific coping strategies influences the amount of distress patients with cancer experience (Carver et al., 1993) and directly affects their quality of life (Chabowski et al., 2018). An evaluation of gender differences in the use of various coping strategies may provide insights that can be used by clinicians to educate patients about more positive coping strategies, as well as develop more tailored interventions, and/or make appropriate referrals to support services.

Women and men can experience short- and long-term stress related to cancer and its treatments that necessitates an ongoing need to adapt and cope (Deimling et al., 2006). According to Lazarus' Cognitive Appraisal Theory (Lazarus & Folkman, 1984), individuals experience stress when they perceive that they are unable to adequately respond to life's demands. Individuals come to this conclusion

through a series of appraisals. Primary appraisal involves making a decision if the stressor poses a threat. Secondary appraisal involves using one's coping behaviors to respond to the threat. Reappraisal combines primary and secondary appraisals to adapt to the stressor. Most coping strategies that are used to respond to stressors can be grouped into engagement and disengagement categories. Engagement coping strategies use more direct approaches to deal with or reduce stress and are typically associated with more adaptive responses. In contrast, disengagement coping strategies tend to be viewed as more avoidant and maladaptive (Connor-Smith & Compas, 2004).

### Literature Review

Only four studies were identified that evaluated for gender differences in coping with cancer (Fife et al., 1994; Goldzweig et al., 2009; Jacobs-Lawson et al., 2010; McCaughan et al., 2012).

In a study in the United States that evaluated 208 women and 125 men with a variety of cancer diagnoses (i.e., breast, testicular, lymphoma, or lung) and assessed for differences in their coping styles using the Ways of Coping Checklist (Fife et al., 1994), the investigators found that, compared to men, women used religion, social support, active coping, and positive focusing more frequently. In contrast, men used avoidance coping more frequently.

In a study of Israeli women (N = 153) and men (N = 186) with colorectal cancer (Goldzweig et al., 2009), the Mental Adjustment to Cancer (MAC) scale was used to assess gender differences in coping styles. Compared to men, women used a fighting spirit style of coping more often. In contrast, men were more likely to use a hopelessness/helplessness style or a fatalistic acceptance style of coping.

In a qualitative study from the United Kingdom (McCaughan et al., 2012), gender differences in the experiences of 14 women and 24 men with colorectal cancer were evaluated. Women were less likely than men to downplay their long-term symptoms or side effects. Of note, some men reported embarrassment or negativity with showing emotions.

In the fourth study (Jacobs-Lawson et al., 2010), 47 women and 53 men with lung cancer in the United States completed the Coping Effectiveness Scale and the religious coping subscale of the Peltzer/National Institute on Aging Brief Multidimensional Measure of Religiousness/Spirituality. Although no differences were found in coping effectiveness, women used religious forms of coping more frequently than men.

Although these four studies provide some insight into gender differences in coping with cancer, several limitations warrant consideration. Sample sizes for two of the studies were very small (Jacobs-Lawson et al., 2010; McCaughan et al., 2012). The methods used to obtain information on biologic sex and/or gender were not reported. Across the four studies, the measures used to assess coping were inconsistent, and none of the studies used the Brief COPE scale, the most common instrument to assess coping in patients with cancer (Scrignaro et al., 2011; Yusoff et al., 2010). Given the limited amount of research on gender differences in coping with cancer, the purpose of this study was to evaluate for gender differences in coping strategies using the Brief COPE scale (Carver, 1997) in a sample of women (N = 277) and men (N = 293) undergoing chemotherapy for either GI or lung cancer.

### Methods

#### Patients and Settings

This analysis is part of a larger longitudinal study that evaluated the symptom experience of patients with cancer receiving chemotherapy in an outpatient setting. Detailed methods for the parent study can be found elsewhere (Miaskowski et al., 2014). In brief, for the larger study, eligible patients were aged 18 years or older; had a diagnosis of a GI, breast, gynecologic, or lung cancer; had received chemotherapy within the preceding four weeks; were scheduled to receive at least two additional cycles of chemotherapy; were able to read, write, and understand English; and had provided written informed consent. Patients were recruited from two comprehensive cancer centers, one Veterans Affairs hospital, and four community-based oncology programs. Of the 2,234 patients approached, 1,343 consented to participate (60% response rate). The major reason for refusal was being overwhelmed with their cancer treatment. Of the 1,343 patients in the parent study, data from 570 patients with GI (n = 412) and lung (n = 158) cancer were used in this analysis. This sample was selected because GI and lung cancers occur equally among women and men (Siegel et al., 2019).

#### Instruments

A demographic questionnaire was used to obtain information on age, gender, ethnicity, marital status, living arrangements, education, employment status, income, and past medical history. The Karnofsky Performance Status (KPS) scale was used to evaluate functional status (Karnofsky et al., 1948). The Self-Administered Comorbidity Questionnaire (SCQ) evaluated the occurrence, treatment, and functional

impact of 13 common comorbid conditions (Sangha et al., 2003). A total SCQ score can range from 0 to 39. The Alcohol Use Disorders Identification Test (AUDIT) evaluated alcohol consumption, alcohol dependence, and the consequences of alcohol abuse in the past 12 months (Babor et al., 2001). A smoking questionnaire assessed smoking history (Kozlowski et al., 1994).

The 28-item Brief COPE scale was designed to assess a broad range of coping responses among adults with a variety of medical conditions (Carver, 1997). This measure was developed based on Lazarus' Cognitive Appraisal Theory (Lazarus & Folkman, 1984). Each item was rated on a four-point Likert-type scale that ranged from 1 ("I haven't been doing this at all") to 4 ("I have been doing this a lot"). Higher scores indicate greater use of the various coping strategies. In total, 14 strategies are evaluated using this instrument (with their respective Cronbach alphas for this study), namely self-distraction (0.46), active coping (0.75), denial (0.72), substance use (0.87), use of emotional support (0.77), use of instrumental support (0.77), behavioral disengagement (0.57), venting (0.65), positive reframing (0.79), planning (0.74), humor (0.83), acceptance (0.68), religion (0.92), and self-blame (0.73). Each coping strategy is evaluated using two items. The eight engagement coping strategies on the Brief COPE scale include active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, and using instrumental support. The six disengagement coping strategies on the Brief COPE scale include self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. The Brief COPE has well-established validity and reliability in patients with cancer (Scrignaro et al., 2011; Yusoff et al., 2010).

### Procedures

The study was approved by the Committee on Human Research at the University of California, San Francisco, and by the institutional review board at each site. Eligible patients were approached by a research staff member in the infusion unit during their first or second cycle of chemotherapy to discuss participation in the study. Patients completed the self-report questionnaires in their homes and returned them to the research office using a postage paid envelope. Written informed consent was obtained from all patients. Medical records were reviewed for disease and treatment information.

### Data Analysis

Data from the enrollment assessment (i.e., the week prior to the initiation of the patients' second or third

cycle of chemotherapy) were analyzed using IBM SPSS Statistics, version 22.0. Descriptive statistics and frequency distributions were calculated for the demographic and clinical characteristics. Gender differences in demographic and clinical characteristics of the study participants, as well as gender differences in the use of various coping strategies, were evaluated using independent sample t tests, chi-square analyses, and Mann-Whitney U tests. A p value of < 0.05 was considered statistically significant. Effect size calculations were done (i.e., Cohen's d) to evaluate for clinically meaningful differences in the use of various coping strategies by women and men. Effect sizes of 0.2 to 0.5 are considered small, greater than 0.5 to 0.8 are moderate, and greater than 0.8 are large (Cohen, 1988).

## Results

### Sample Characteristics

Of the 570 patients, 49% were female and 51% were male (see Table 1). Gender was identified by patient self-report from the options of male, female, or transgender man/transgender woman. Biologic sex was identified through genomic analysis and aligned with self-reports of gender for all patients. Although this study evaluated both biologic sex and gender, the term *gender* is used to contextualize differences between women and men. Compared to the men, women were significantly younger, were less likely to be employed, and reported a lower annual household income. In addition, women had a lower body mass index (BMI), a higher number of comorbid conditions, a higher SCQ score, a lower functional status score, a lower AUDIT score, were less likely to exercise on a regular basis, and were more likely to have lung cancer (see Table 2). Although hemoglobin and hematocrit were lower in women, these findings are not unexpected.

### Gender Differences in the Use of Coping Strategies

As shown in Table 3, compared to men, women reported significantly greater use of 6 of the 14 coping strategies assessed by the Brief COPE, namely positive reframing ( $p = 0.02$ ), religion ( $p < 0.001$ ), instrumental support ( $p = 0.007$ ), self-distraction ( $p = 0.006$ ), denial ( $p = 0.001$ ), and venting ( $p < 0.001$ ). In contrast, men reported higher use of humor ( $p = 0.032$ ) and substance use ( $p < 0.001$ ).

No significant gender differences were found in self-reported use of active coping, planning, acceptance, emotional support, behavioral disengagement, and self-blame. For the subscale scores of the Brief COPE that demonstrated significant differences, effect sizes ranged from 0.18 (humor) to 0.35 (venting).

## Discussion

This study is the first to evaluate for gender differences in the use of coping strategies in a large sample of patients receiving chemotherapy for GI or lung

cancer using the Brief COPE. Of note, compared to other studies of patients with cancer that used the Brief COPE (Dev et al., 2019; Rogers et al., 2017; Scrignaro et al., 2011), the patients' scores for the use

**TABLE 1. Gender Differences in Demographic Characteristics**

Characteristic	Women (N = 277)		Men (N = 293)		t	p
	$\bar{X}$	SD	$\bar{X}$	SD		
Age (years)	58.5	12.2	61.1	11.5	-2.61	0.009
Education (years)	15.9	3.2	16.2	3.1	-0.87	0.381
Characteristic	n	%	n	%	$\chi^2$	p
<b>Self-reported ethnicity</b>					2.92	0.405
White	179	66	207	71		
Asian or Pacific Islander	33	12	35	12		
Black	29	11	22	8		
Hispanic, mixed, or other	31	11	26	9		
<b>Married or partnered</b>					-	0.13 <sup>a</sup>
Yes	176	64	202	70		
No	101	37	91	30		
<b>Lives alone</b>					-	0.917 <sup>a</sup>
Yes	56	20	60	21		
No	221	80	233	79		
<b>Employed</b>					-	0.018 <sup>a</sup>
Yes	72	26	103	36		
No	205	74	190	64		
<b>Annual household income (\$)</b>					-	0.015 <sup>b</sup>
Less than 30,000	60	24	53	20		
30,000-70,000	63	25	47	18		
70,001-100,000	38	15	46	17		
Greater than 100,000	87	35	119	45		
<b>Child care</b>					-	0.13 <sup>a</sup>
Yes	58	22	47	16		
No	219	79	246	84		
<b>Elder care</b>					-	0.868 <sup>a</sup>
Yes	18	7	21	8		
No	259	93	272	92		
<b>Current or past history of smoking</b>					-	0.264 <sup>a</sup>
Yes	108	40	127	45		
No	169	60	166	55		
<b>Exercise on a regular basis</b>					-	0.031 <sup>a</sup>
Yes	169	62	207	71		
No	108	38	86	29		

<sup>a</sup> Fisher's exact test

<sup>b</sup> Mann-Whitney U test

**Note.** Because of rounding, percentages may not total 100.

of each of the strategies in the current sample were similar. In terms of the engagement coping strategies that demonstrated gender differences, women had higher scores for positive reframing, religion, and using instrumental support, whereas men had higher scores for humor. In terms of disengagement coping strategies that demonstrated gender differences, women had higher scores for self-distraction, denial, and venting, whereas men had higher scores for substance use.

### Use of Engagement Coping Strategies

Consistent with a previous report (Fife et al., 1994), women in the current study were more likely than men to use positive reframing ( $d = 0.2$ ). Positive reframing has been shown to decrease feelings of depression and allow for stressful situations to be redefined as less stressful (Lambert et al., 2012). Of note, in one study of men with prostate cancer (Pascoe & Edvardsson, 2016), positive reframing was a coping characteristic associated with the development of positive feelings. In another study of patients with breast cancer (Robbins et al., 2019), women reported that positive reframing served as a beneficial coping strategy.

Again, consistent with previous studies (Fife et al., 1994; Jacobs-Lawson et al., 2010), women in the current study reported more frequent use of religious coping ( $d = 0.31$ ). Previous research has identified religion as a positive coping mechanism for women with breast cancer (Gonzalez et al., 2016) and men with prostate cancer (Mollica et al., 2017; Pascoe & Edvardsson, 2016; Rand et al., 2012). Religious coping during cancer is dynamic and is used by individuals differently (e.g., to facilitate closeness with a god, for spiritual connection with others, for comfort, to make meaning of the cancer experience) (Pargament et al., 2000).

Consistent with previous research (Fife et al., 1994), the women in the current study reported higher use of instrumental support ( $d = 0.23$ ). The Brief COPE assesses instrumental support by asking patients to rate how often they are “getting help or advice from other people” (Carver, 1997). Most patients with cancer, regardless of gender, will need some amount of instrumental support, as treatment plans are often lengthy and complex (Pinquart et al., 2007). With that in mind, traditional views of masculinity as it relates to help-seeking could account for the gender differences in the scores for the use of this strategy (Addis & Mahalik, 2003).

The only engagement coping strategy that had higher scores in men was the use of humor ( $d = -0.18$ ). A concept analysis of the use of humor in

the context of adults with cancer found that humor helped patients positively cope with their situations, as well as facilitated closeness between the patient and nurse (Tanay et al., 2013).

### Use of Disengagement Coping Strategies

Although not reported previously, women in the current study had higher scores for the use of self-distraction. Self-distraction is a form of disengagement coping that has been associated with decreased self-esteem, fewer functional relationships, and decreased meaning in life in both women and men with cancer (Schroevers et al., 2011). However, similar to other forms of disengagement coping, self-distraction may have some adaptive use (Collie et al., 2005).

In the current study, women reported higher scores for denial ( $d = 0.29$ ); however, previous research that evaluated for associations between gender and the use of denial as a coping strategy in patients with cancer yielded inconclusive findings (Vos & de Haes, 2007). Denial can be viewed as either a maladaptive or adaptive response depending on how it is used, and its utility in dealing with illness is debated in the literature (Vos & de Haes, 2007). However, evidence suggests that denial can lead to worse outcomes (e.g., delay in seeking care and in getting treatment) and a decrease in survival rates for patients with cancer (Richards et al., 1999).

Given that previous reports found that men are less likely to express emotions through venting (McCaughan et al., 2012; Zakowski et al., 2003), it is not surprising that women in the current study reported higher scores for this coping strategy ( $d = 0.35$ ). Although the use of venting was shown to perpetuate negative emotions in one study (Brown et al., 2005), in other studies, it has provided an avenue to enlist needed social support (Asuzu & Elumelu, 2013; Nils & Rimé, 2012).

Although no studies were found on gender differences in substance use as a coping strategy in patients with cancer, in the current study, men reported higher scores for this subscale ( $d = -0.27$ ). This finding is consistent with the higher AUDIT scores reported by men in this study. In a systematic review by Yusufov et al. (2019), substance use was present in 2%–35% of patients with cancer, and these rates have remained relatively stable from 1995 to 2018. Substance use can lead to less desirable outcomes because of negative effects on physical and emotional health, its potential to create barriers to treatment adherence, and its potential to impact pain tolerance (Compton & Chang, 2017). In addition, in a meta-analysis of coping strategies used by men with prostate cancer, men who

coped in ways that did not allow them to face their cancer head on experienced more physical and emotional pain (Roesch et al., 2005).

Although coping with cancer has been studied extensively (Kvillemo & Bränström, 2014; Roesch et

al., 2005), much of the literature provides information on sex-specific cancers (Hoyt & Rubin, 2012). In the large sample of patients with GI and lung cancers in the current study, the use of a number of coping strategies did, in fact, differ between women and men. It

**TABLE 2. Gender Differences in Clinical Characteristics**

Characteristic	Women (N = 277)		Men (N = 293)		t	p
	$\bar{X}$	SD	$\bar{X}$	SD		
Body mass index (kg/m <sup>2</sup> )	24.9	5.5	26.3	4.5	-3.19	0.002
Karnofsky Performance Status score	78	13.1	82.3	12.3	-3.98	< 0.001
Number of comorbid conditions	2.8	1.6	2.4	1.4	3.31	0.001
Self-Administered Comorbidity Questionnaire score	6.4	3.4	5.6	3.2	2.87	0.004
AUDIT score	2.4	2.1	3.8	3	-5.08	< 0.001
Time since diagnosis (years) <sup>a</sup>	1.4	3.2	1.4	2.6	-	0.463 <sup>b</sup>
Number of prior cancer treatments	1.5	1.3	1.3	1.4	1.57	0.118
Number of metastatic sites including lymph node involvement	1.4	1.1	1.4	1.1	0.22	0.827
Number of metastatic sites excluding lymph node involvement	1	1	0.9	1	0.72	0.469
Hemoglobin	11.4	1.3	12.2	1.7	-5.95	< 0.001
Hematocrit	34.5	3.7	36.5	4.6	-5.63	< 0.001
Characteristic	n	%	n	%	$\chi^2$	p
<b>Cancer diagnosis</b>					-	0.025 <sup>c</sup>
Gastrointestinal	188	68	224	77		
Lung	89	32	69	24		
<b>Prior cancer treatment</b>					3.93	0.27
No prior treatment	74	28	99	36		
Only surgery, chemotherapy, or radiation therapy	104	39	97	35		
Surgery and chemotherapy, or surgery and radiation therapy, or chemotherapy and radiation therapy	57	21	53	19		
Surgery and chemotherapy and radiation therapy	33	12	30	11		
<b>Metastatic sites</b>					2.68	0.443
No metastasis	53	19	59	20		
Only lymph node metastasis	55	20	54	19		
Only metastatic disease in other sites	89	33	80	28		
Metastatic disease in lymph nodes and other sites	76	28	96	33		
<b>Cycle length</b>					0.38	0.827
14 days	165	60	181	62		
21 days	97	35	97	33		
28 days	15	5	14	5		

<sup>a</sup> Median time since diagnosis for women was 0.41 years; median time since diagnosis for men was 0.3.

<sup>b</sup> Mann-Whitney U test

<sup>c</sup> Fisher's exact test

AUDIT—Alcohol Use Disorders Identification Test

**Note.** Because of rounding, percentages may not total 100.

**Note.** The Karnofsky Performance Status score is widely used to evaluate functional status. Scores range from 100 (without evidence of disease) to 0 (death). AUDIT scores range from 0 to 40. Scores greater than 8 are defined as hazardous use and scores of greater than 16 are defined as use of alcohol that is likely to be harmful to health. The Self-Administered Comorbidity Questionnaire consists of 13 common medical conditions presented in language that can be understood without medical vocabulary. The total score ranges from 0 to 39.

is worth noting that, compared to men, women had higher scores for three types of disengagement coping (i.e., denial, venting, and self-distraction), all of which have been correlated with higher levels of distress in patients with cancer (Culver et al., 2002). Men reported a higher score for the disengagement coping strategy of substance use, which suggests not only that men are more likely to use substances to cope, but also that they may be more vulnerable to their negative consequences.

### Implications for Nursing

Clinicians can use these findings to assess patients' use of various coping strategies, as well as reinforce more positive ones and intervene on more negative ones through appropriate referrals. In addition, clinicians need to be mindful that gender is constructed by a variety of cultural, political, and social norms (Kiss & Meryn, 2001) and has an influence on the way that people cope with various stressors, as well as on their health outcomes (Verdonk et al., 2009). Gender-based stereotypes of emotional expression may impact how women and men express themselves and the ways in which support is offered to them by others (Zakowski et al., 2003). These nuances could account for some of the differences in patients' scores. With these findings

### KNOWLEDGE TRANSLATION

- Male and female patients with cancer use different strategies to cope with their diagnoses.
- Gender is constructed by a variety of cultural, political, and social norms and has influence on the ways in which people cope, as well as on health outcomes.
- Clinicians have the opportunity to assess patients' use of coping strategies and reinforce or intervene as appropriate.

in mind, clinicians should be more aware of their own preconceived notions about sex and gender and reflect on how these stereotypes may influence the psychosocial care they provide to patients with cancer.

### Limitations and Future Research

Several limitations should be noted. First, the major reason for refusal to participate in this study was being overwhelmed with cancer treatment, which suggests a missed opportunity to measure coping strategies in patients who may be experiencing higher levels of stress. In addition, coping was assessed at only one point in the treatment trajectory. Future research needs to evaluate whether gender differences in the

**TABLE 3. Gender Differences in the Brief COPE Subscale Scores**

Subscale	Women (N = 277)		Men (N = 293)		t	p	Cohen's d
	$\bar{X}$	SD	$\bar{X}$	SD			
<b>Engagement coping strategies</b>							
Active coping	6	1.7	5.9	1.7	0.82	0.414	-
Planning	5.2	1.8	5.1	1.9	1.2	0.231	-
Positive reframing	5.4	2	5	2	2.34	0.02	0.2
Acceptance	6.6	1.5	6.7	1.4	-0.81	0.418	-
Humor	4	2	4.3	2	-2.15	0.032	-0.18
Religion	5.1	2.4	4.4	2.3	3.63	0.001	0.31
Using emotional support	6.4	1.6	6.2	1.8	1.77	0.077	-
Using instrumental support	5.4	1.8	5	1.8	2.71	0.007	0.23
<b>Disengagement coping strategies</b>							
Self-distraction	5.5	1.7	5.1	1.8	2.75	0.006	0.23
Denial	2.7	1.3	2.4	1	3.39	0.001	0.29
Venting	4	1.6	3.5	1.5	4.07	0.001	0.35
Substance use	2.1	0.6	2.4	0.9	-3.24	0.001	-0.27
Behavioral disengagement	2.3	0.8	2.2	0.7	1.63	0.104	-
Self-blame	2.8	1.3	2.7	1.1	1.85	0.065	-

**Note.** Each item was rated on a 4-point Likert-type scale ranging from 1 ("I haven't been doing this at all") to 4 ("I have been doing this a lot"). Each coping strategy is evaluated using two items; therefore, scores can range from 2 to 8, with higher scores indicating greater use of the various coping strategies.

use of various coping strategies change throughout the course of cancer treatment and into survivorship.

## Conclusion

This large descriptive study is the first to provide detailed information on gender differences in the use of engagement and disengagement coping strategies in patients with cancer undergoing chemotherapy. This information can assist clinicians when they assess for challenges that patients have with coping with cancer and its treatments. This information can guide clinicians in how to intervene with men and women to enhance their use of a variety of engagement coping strategies.

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