Published in final edited form as:
Psychooncology. 2019 February ; 28(2): 228–254. doi:10.1002/pon.4953.

Application of Psychological Theories on the Role of Gender in Caregiving to Psycho-Oncology Research

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Abstract

Background: Cancer affects both men and women, yet systematic understanding of the role of gender in caregiving and dyadic caregiver-patient interactions is lacking. Thus, it may be useful to review how gender theories apply to cancer caregiving, and to evaluate the adequacy of current cancer caregiving studies to the gender theories.

Methods: Several databases, including MEDLINE (Ovid), PsychINFO, PubMed, and CINAHL, were used for searching articles published in English between 2000 and 2016. The search was restricted by age (≥ 18), and yielded 602 articles, which were subject to further screen and review based on selection criteria. Of 108 full texts reviewed to determine inclusion eligibility for this review, 55 met the criteria and included for review.

Results: The reviewed studies supported the “gender role” and “doing gender” perspectives for caregiver selection. The role identity, role strain, and transactional stress theories were supported for predicting caregiving outcomes at the individual level. Furthermore, attachment, self-determination, and interdependence theories incorporated caregiver factors that predicted the patients’ outcomes, and vice versa.

Conclusion: Despite limited gender theory-driven research in cancer caregiving and psycho-oncology in general, the utility of gender theories in (a) identifying sub-groups of caregiver-patient dyads who are vulnerable to the adverse effects of cancer in the family and (b) developing evidence-based interventions is promising. Integrating broader issues of medical trajectory, lifespan, sociocultural, and biological factors in gender-oriented research and practice in Psycho-Oncology is encouraged.

Keywords

gender/sex; gender theories; caregiving processes and outcomes; psychological distress; cancer; oncology

Over the past few decades, the gender composition of family caregivers who provide unpaid informal care to persons with medical illness has changed noticeably: male caregivers (of all kinds) were 25% of the caregivers surveyed in 1987 and were 40% in 2016.[1] Inasmuch as caregiving has historically been considered a women’s role, contemporary caregiving

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research must reflect this changing representation to better understand the role of gender in various aspects of caregiving.[2]

The number of persons diagnosed with cancer has continued to increase. So does the number of their family caregivers who provide an extremely important source of care for cancer patients and survivors.[3] Gender issues in caregiving have been theorized, although primarily grounded on caregiving to patients with dementia.[2] Cancer caregiving is more acute yet intense compared with caregiving for patients with other chronic illness.[4] Thus, it is difficult to draw firm conclusions about cancer caregiving from studies of other diseases. In this article, we present several theories that predict caregiving involvement and outcomes by gender of the caregiver or the patient, as a conceptual guide to evaluate their utility in current cancer caregiving studies. The selected theories are traditional gender theories and relational theories, which have been applied to examine gender similarities and differences in caregiving in psychological science.

Gender Theories on Involvement in Caregiving

The *gender-role perspective* posits that individuals learn what are generally considered appropriate or desirable roles to enact in social relations, often defined by norms of society centered around concepts of femininity and masculinity. A common stereotype of female gender relates to nurturing behaviors; when family members or others in society are in need of care, females who perceive themselves as societal members expected to provide care are more likely to do so.[5] Also, females who have been reinforced for their nurturing behaviors are more likely to carry them out in the future, according to the *gender-role socialization* view. Thus, in this view, women engage in caregiving behaviors largely due to social developmental and learning processes, whereas caregiving signifies for men a new, unexpected role.[5] Clearly roles are fluid over time, as a product of diverse social forces. However, these characterizations are widely accepted as remaining largely applicable in a general gender-role model.

Other recent gender theories have different perspectives.[6] For example, a *gender relations approach* considers gender to be a system of stratification simultaneously signifying power and structural interactions between and among men and women. A *"doing gender" approach*[7] emphasizes that a gendered self emerges by enacting internalized ideals of behaviors formed by interpersonal interactions. The crux of this approach is that behavior is not determined by individuals' gender identity but by relational and institutional contexts in which the individuals enact gendered selves and sexual identities. While people orient their behaviors to gender ideals, behavior itself can vary by context (e.g., the context of the caregiver-patient dyad).[7]

Another viewpoint, the *lifespan perspective*, incorporates late-life role changes due to retirement, the empty-nest experience, etc. Late-life role changes result in differential shifting of psychological and social behavior by gender: men toward nurturing others, women toward productivity and assertiveness.[8] Thus, in later life, men's caregiving role can be more welcome and associated with greater feelings of self-efficacy and mastery, whereas women's caregiving role can be associated with constraint and resentment. Natural biological changes related to aging in women and men may also influence caregiving perceptions and behaviors.

Yet another view, the *close-relationship research perspective*, emphasizes emotional closeness as a determinant of caregiver selection, as the inherent nature of caregiving or care receiving involves an intimate emotional tie between the two.[9] According to this perspective, females often become primary caregivers because they are more emotionally connected to the patient than men, more inclined to sacrifice their social life, and to ask for little help from others, even if others are available, in order to maintain emotional closeness with the patient.[9]

Individual-Oriented Gender Theories on Caregiving Experiences and Consequences

A second issue is who is more or less likely suffer from caregiving, and why. Again, there are several perspectives on this question. Two early meta-analyses[10, 11] concluded that caregivers' gender differences in mental and physical health outcomes exist because females deal with more stressful caregiving cases and situations, yet have fewer social resources, compared to males. The *transactional stress theory* of Lazarus and Folkman[12] and its descendants, such as the Pearlin Stress Process Model and the Modified Stress Process Model,[13] are commonly employed theoretical framework explaining such differential outcomes of caregiving experiences at the invidivual level. This framework posits that when a demand, either internal or external, is appraised as exceeding the person's resources, the demand constitutes a stressor.

Guided mainly by this conceptual framework, a meta-analysis[2] on caregiver stressors, social resources, and physical health found that compared to men, women provided more caregiving hours, helped with more caregiving tasks, and assisted with more personal care. Women also reported higher levels of caregiving burden and depression, and lower levels of subjective well-being and physical health. When gender differences in stressors (e.g., hours of caregiving) and resources (e.g., social support) were controlled for, however, the size of gender differences in depression and physical health reduced to levels observed in non-caregiving samples.

Role identity theory[5] provides another commonly employed view on caregiver burden, by positing that the more the caregiver role is embraced, the less the caregiver is burdened by that role. Specifically, caregiver identity theory posits that individuals undergo self-appraisal through their new caregiver role and determine to what extent the role is congruent with their global self-identity. When the two identities are incongruent, distress arises. Increased caregiving demands often aggravate role discrepancies, resulting in more severe negative outcomes. Grounded on this theory, males may experience more distress when required to take on tasks incongruent with their gender identity. However, male caregivers tend to show lower levels of stress, which researchers have attributed to their acceptance of their caregiving as a challenge in which they focus on necessary tasks while ignoring emotions.[14]

A new caregiver role on top of existing social roles can be associated with different outcomes. According to the *role strain theory*,[15] caregiver and work responsibilities frequently compete and conflict when individuals struggle to meet demands from multiple competing roles. This is particularly common for middle-aged persons of the so-called "sandwich generation," who have responsibilities for the generations on either side of them: older and younger. Thus, female and adult-child caregivers are more likely to have negative caregiving outcomes, as they are often involved in several social roles including caregiving and at work. A fast growing caregiver population, grandparents who provide care for their grandchildren, are also more likely to become unemployed than their non-caregiving counterpart to accommodate additional strains from caregiving.

Role enhancement theory,[15] on the other hand, posits that performing multiple roles can have positive consequences, as participating in additional roles provides the person with more opportunities and resources to build social skills and improve self-esteem. Accordingly, persons with additional roles, such as employed caregivers as opposed to non-employed caregivers, are more likely to function better in performing the target caregiver role.

Relationship-Oriented Gender Theories on Caregiving Experiences and Consequences

Not all gender theories take the individual as the dominant perspective. Some theories focus instead on the nature of the relationships between caregiver and patient. According to the *social exchange theory* perspective, caregivers who are in less mutual and more unilateral relationships with the care recipient (by doing more work and receiving fewer rewards) would be expected to experience greater burden.[16] However, among family caregivers, such under-benefited relationships of giving more than receiving can be functional, under the expectation that the balance of exchange would be reestablished in the future and by feelings of indebtedness to care-recipients, particularly for parents for all that they have done in the past.[17]

Adult attachment theory[18] provides useful guidance for conceptualizing gender in caregiving for relatives with medical illness from an interpersonal and family context. This theory posits that humans have an attachment system operating to maintain a sense of security, which is activated by threat. Individual differences in attachment patterns arise because attachment figures vary in responsiveness in times of need. Similarly, individual differences in caregiving behavior in response to a partner's distress exist.[13, 19] For example, secure attachment is likely to be tied to sensitive and cooperative caregiving in response to situational stresses, whereas avoidant attachment is likely to be related to less involvement in caregiving and to poorer caregiving when there is need for emotional support. Anxious attachment, on the other hand, is likely to be related to compulsive and controlling caregiving, driven and dominating rather than responsive and cooperative, which often becomes ineffective caregiving.

Another relationship-oriented theory useful for conceptualizing gender in caregiving for relatives with medical illness is *self-determination theory*.[20] According to this theory, there are diverse reasons to engage in any particular behavior. These regulatory motives can be ordered along a continuum ranging from controlled to autonomous. The most controlled motive for acting is *external*, in which a behavior is engaged in because of external forces such as rewards or punishments. When the motive has begun to be internalized but regulation of the behavior is dependent upon implicit self-approval for compliance and self-derogation for noncompliance, the motive is *introjected*. The next step is an *identified motive*, where a member of a group or society fully accepts and thus volitionally engages in behaviors that are valued by that collective. With respect to caregiving, this would mean that the value of caring for an ill spouse is held by one's community and one personally believes the value is worthy in its own right. In the next most autonomous form of motivation, the person integrates this societal value with other aspects of the self. This *integrated motive* involves loving and respecting the care recipient as well as acknowledging that caregiving provides meaning and purpose.[20]

Interdependence theory on close relationships[17] is particularly important for understanding the role of gender in the interpersonal context, as two meta-analyses found that cancer patients and their caregivers report moderately correlated levels of psychological distress, regardless of the patient's gender.[21, 22] These findings suggest that cancer has a similar psychological impact on both patients and caregivers, and that there is concordance in their emotional well-being. The findings also reinforce the importance of gaining better scientific understanding of how women and men emotionally influence each other while under stress.

Present Review Project

The theories presented above provide a comprehensive framework to better understand and predict who is likely to be involved in caregiving for relatives with cancer and how gender of the caregiver and the patient would influence caregiving outcomes with cancer caregiver population. Despite the acknowledgement of the significant role of gender in psycho-oncology,[23] only a few studies to date, have tested any gender theories with a cancer caregiver population. Thus, we reviewed publications on cancer caregiving and considered the adequacy of gender theories to those studies. We hypothesized that as cancer diagnosis often comes as a surprise, the initial involvement in cancer caregiving may be less likely to be determined solely by the caregivers' gender than for other diseases and may be more likely to be determined based on proximity and availability (caregiving involvement hypothesis).

Regarding caregiving outcomes, we hypothesized that *role theories* and *transaction stress theory and its descendants* would be mainly supported by those who feel pressured to carry out the caregiver role and those who have fewer resources to adjust to the new caregiver role. This would be reflected in reporting greater ill-being outcomes (individual-level caregiving outcome hypothesis). We also hypothesized that *interdependence theory* would be mainly supported for relational-level caregiving outcomes (relational-level caregiving outcome hypothesis).

Methods

We searched the several databases, including MEDLINE (Ovid), PsychINFO, PubMed, and CINAHL, for articles published in English between 2000 and 2016. Keywords searched included target population (caregiver, daughter, famil*, husband, son, spouse, and wife), target of interest (cancer/neoplasm, caregiving, gender, **sex**, and oncology), and target outcomes (illness adjustment, mental health/functioning/morbidity, physical health/functioning/morbidity, psychological adaptation, psychosocial, quality of life, spiritual adjustment, and well-being). The search restricted by age (≥ 18) yielded 602 articles.

As shown in the PRISMA flowchart (Figure 1), titles and abstracts of the studies were screened and reviewed using the following selection criteria: Data-based research articles, published in refereed journals, which utilized rigorous quantitative or qualitative methods, had a representative sample with a sufficient sample size to address the research questions, and used validated measures. We excluded studies of family members of pediatric cancer patients, due to the substantial differences in treatment and concerns involved and the nature of gender in the caregiver-patient dyads, compared with adult cancer patients.

Of 602, we excluded 177 duplicates and 324 articles after title screen based on relevance (e.g., 147 articles on non-family or friend caregivers; 109 artciles on non-cancer sample), Including seven studies that were not identified through the search criteria we used but were found from a recent literature review,[24] a total of 108 full text articles were subject to further review. Of 108, articles reporting no gender specific results (35), intervention protocol (5), pediatric patients’ family members (4), no gender results due to the sample was homogeneous by gender (4), pediatric patients (3), not a journal article (1), and not cancer patients (1) were excluded, yielding 55 studies to be included in this review.

Results

As shown in Table 1, studies reviewed are organized by caregiver selection, caregiving outcomes at the individual level, and caregiving outcomes at the relational level or context.

Caregiver Selection.

We hypothesized that regardless of one’s gender, persons who are retired or empty-nesters (cf. the lifespan perspective), and who live in the same household or nearby are likely to provide tangible and medical care; those who are capable of navigating medical and support systems are likely to provide informational care (cf. the doing gender perspective). On the contrary, women (wives, daughters, mothers, girl-friends) are more likely to provide emotional support, regardless of physical proximity (cf. *the gender role perspective*) and females are more likely to be emotionally connected to the patient (cf. *the emotional closeness perspective*).

A few studies to date have provided empirical support for these predictions. For example, emotional support immediately after cancer surgery has been found to be provided equally by both genders; emotional support declined significantly only among male caregivers at one and six months after the surgery.[19, 25–27] In contrast, cancer caregivers from a nationally representative sample of adults were predominantly female (68%); this pattern was the same as caregivers of other major illnesses requiring care, such dementia or diabetes, whereas the gender of caregivers of frail elderly was almost equally distributed.[4] Close friends or non-relatives were more likely to care for cancer patients, whereas grandchildren were more so for frail elderly.[4]

Female caregivers, compared with male caregivers, reported more involvement in medical care,[28–33] and more hours spent for caregiving and more subsequent changes to their work situations since initation of their cancer caregiver role.[34] In addition, employed female caregivers reported providing more support to the patients than unemployed male caregivers.[35]

Overall, these findings suggest that women are more likely to partake in caregiving, although the patients' needs and availability of the caregivers, rather than the caregivers' gender per se, are more likely to be primary factors for cancer caregiver selection. This supports the *doing gender perspective*. A larger proportion of females compared with males is represented in cancer caregiving, supporting also the *gender role perspective*.

Caregiving Outcomes at the Individual Level.

Male spousal caregivers of patients with breast or gynecologic cancer reported difficulty with communicating with family and friends regarding the wives'/partners' cancer soon after the diagnosis, and carrying out housekeeping and child care throughout the first year, which are traditionally female gender tasks.[25] Male caregivers have also reported greater distress when their wives had worse psychosocial functioning,[36] whereas female caregivers have reported greater distress when they perceived themselves providing little support to the patient.[37] Social standards imposed on female caregvers of taking on more caregiving tasks than they can handle has often been associated with their greater levels of "burn-out" and lack of self care.[26, 30–33, 35]

Both male and female caregivers reported that taking on non-traditional roles presented challenges.[26] For example, for female caregivers, yardwork, household maintenance, and driving were difficult, while for male caregivers, increased housework such as cooking and cleaning presented challenges.[26] However, later on in the patient's treatment, male caregivers reported being more comfortable with non-traditional roles such as housework, cooking, and shopping or the family.[25] Such gender differences in individuals' adjustment outcomes have also been seen in some studies of adult offspring caregivers, adding support to the lifespan perspective.[38, 39]

Gender also influenced coping strategies. Male caregivers tended to report more difficulty talking about their emotions and asking for support.[25] Both male and female caregivers used self-silencing in order to see to the patient's needs; males attributed this to the masculinity norm that prohibits self-expression, whereas for females, self-silencing was more a matter of sacrificing to prioritize the patient.[40] The use of coping strategies that involve avoiding talking about feelings related to higher distress and anxiety among both genders.[41,42]

The coping strategy of substance use was utilized more frequently by male caregivers, resulting in their lower positive affect than female caregivers.[41] Receipt of social support has also related to only male caregivers' higher distress and guilt,[29, 43,44,] which may be attributable to their emphasis on independence.[45] In addition, male prostate cancer patients were most concerned with their sexual adjustment issues, whereas their wives were most concerned with (dis)satisfaction with healthcare.[46] These findings support *gender role identity theory*. However, one study reported male caregivers' higher distress than male patients; and female patients' higher distress than female caregivers, suggesting the additional influence of the patient vs caregiver role in individuals' adjustment outcomes.[47]

Other existing social roles are another complicating factor. Caregivers with children living at home reported higher anxiety than those without. Adult-offspring caregivers have also reported greater caregiver guilt[48] and stress than spousal and other caregivers. These findings support *role strain theory*, in which increased demands from the additional role of caregiver compete for limited resources against demands from preexisting social roles, thus yielding greater distress. This was more the case among female caregivers who often neglect self-care in order to carry out the caregiver role[26, 38] and among employed female caregivers, who were more likely to provide instrumental care than men (regardless of employment status) and who reported greater emotional distress and caregiving burden.[30, 35]

Female caregivers have also reported greater financial burden, which could contribute to perceived role strain as they are required to simultaneously provide caregiving and manage and maintain financial resources for the family.[49] However, being employed *per se*, independent of gender, has been a protective factor against low quality of life,[50] supporting *role enhancement theory*, in which being employed boosts personal and social resources for better quality of life. The new additional caregiver role has also related to greater benefit finding, appreciating others, and reprioriziting life values,[39,51–53] again supporting role enhancement theory.

Consistent gender differences in cancer caregiving stress (female**s** reporting greater stress) have been reported in numerous studies grounded on *transaction stress theory* and its descendants: due in part to men's having higher perceived resources (e.g., self-esteem or mastery**)** and taking personal gratification in being a caregiver.[38] The disproportionate stress levels by gender have in turn been related to poorer mental and physical health outcomes of female caregivers, compared to male counterparts.[34, 35,27,40, 47, 48, 51, 53–69] Among women, particularly young to middle-aged female caregivers (also supporting the *lifespan perspective*), greater perceived demands, such as greater unmet needs in various care domains, resulted in higher caregiving stress.[70] Being younger and being parents of young children have related to higher anxiety levels,[56, 57] again supporting the lifespan perspective.

Overall, findings support *transactional stress theory*, *role identity theory*, and *role strain theory* among individual-oriented gender theories. Findings suggest that female family members are more likely than males to identify caregiving for a relative with cancer as their new role. Yet due in part to exceeding demands from existing social roles and limited resources, they are prone to stress and compromised mental and physical health from caregiving. However, because the majority of studies did not test gender effects in the relation of demands or resources linking to individuals' adjustment outcomes, the adequacy of the transactional stress theory in gender research is inconclusive.

Caregiving Outcomes at the Relational/Context Level.

Adult attachment orientations were differentially related to caregiving behaviors by gender of the caregivers. For example, among female caregivers only, secure attachment related to more frequent emotional care, anxious attachment related to more frequent tangible care,[28] and avoidant attachment related to greater marital distress.[52,71] Among male caregivers only, avoidant attachment related to less frequent emotional care, and anxious attachment related to less frequent medical care.[28]

Supporting *self-determination theory (SDT)*, autonomous caregiving motives have also related to better caregiving outcomes, although this was the case only for male caregivers.[52, 72] Caregiving motivations also have long-term impact on quality of life, once again only among male cancer caregivers: Autonomous caregiving motives link to greater likelihood of finding meaning, making peace, and relying on faith, which in turn relates to better mental and physical health years later.[72]

Supporting the *emotional closeness perspective*, female caregivers reported higher levels of psychological distress and decreased relationship satisfaction when their patients reported greater distress.[44, 69] Moreover, discrepant ratings of marital satisfaction were more associated with greater distress for females than males.[32]

Most of the studies examining *interdependence theory on close relationships* have looked at breast or prostate cancer patients and their heterosexual spousal caregivers.[25, 31, 69, 73] For example, prostate cancer patients' disease-specific quality of life was associated with their female partner's psychological functioning,[69] which was not the case among breast cancer dyads.[73] Breast cancer patients' greater depression and stress were associated with their (mainly) male partners' poorer physical health and well-being.[33] In the same study, the women's greater depression and their partners' high levels of stress were associated with the partners' poorer physical health, suggesting that the unconventional gender role for male caregivers contributed to greater stress and worse health outcomes.

A meta-analysis examining gender effects across dyadic studies with cancer found that patients reported greater distress than did their caregivers when the patient was female, whereas caregivers reported greater distress than did patients when the patient was male, suggesting distress was determined by gender rather than by patient versus caregiver role.[59] The same was the case for posttraumatic growth: women (whether caregiver or patient) reported greater posttraumatic growth than men following the cancer diagnosis,[74] supporting the theories/perspectives at the individual-level, such as gender role perspective and transaction stress theory.

However, one study examined this interdependent relationship among mothers with cancer and their adult caregiving daughters. In these dyads of women, the mothers' (patients) greater distress was related to the daughters' (caregivers) better mental health but poorer physical health, in addition to each person's psychological distress being the strongest predictor of her own mental and physical health.[39] Similar patterns were found with non-sex-specific cancers, such as colorectal and lung cancer caregiver-patient dyads. For both patients and caregivers, depressive symptom level was uniquely associated with one's own concurrent mental and physical health. Female patients' depressive symptoms were also related to better mental health and poorer physical health of their caregivers of any gender, particularly when the pair's depressive symptoms were at similar, elevated levels. On the other hand, male patients' elevated depressive symptoms related to their caregivers' (mainly females) poorer mental health.[75]

Such crossover and gender effects were also found in a 3-year longitudinal study with mixed types and stages of cancer, in which male patients' distress influenced their partners' later distress but not the other way around.[76] In addition, when caregivers were men, there was lower concordance between ratings of the patient's physical symptoms and distress,[19,77] supporting the gender role as well as interdependence perspectives.

Decreased relationship satisfaction has related to anxiety and depression and reduced quality of life in male partners and patients, and female partners, whereas this was not the case for female patients.[78] Female caregivers were more susceptible than male caregivers to changes in marriage satisfaction following cancer diagnosis.[62, 63] Findings suggest that relationship satisfaction moderates the associations of the interdependence between caregiver and patient with their health outcomes. None of the studies reviewed here directly supported the social exchange theory perspective.

In summary, relational factors, such as secure attachment orientation, autonomous caregiving motives, and interdependence between patients and their caregivers, all appear to be associated with better mental and physical health consequences of caregiving, though the strength of the association depends somewhat on the gender of caregivers or patients.

Discussion

Growing evidence suggests that gender plays a role in cancer caregivers' diverse experiences and consequences, depending also on relationship characteristics of the caregivers with patients. However, investigation driven by gender theories in this emerging field is, to date, lacking.

Does gender matter in cancer caregiver selection?

The majority of studies have affirmed a bias toward females being caregivers, supporting the gender role perspective.[19, 26, 30, 34, 35] However, studies that included both genders of caregivers and targeted patients with non-gender specific cancer,[40, 45] have increasly supported the "doing gender" perspective, in which caregivers are selected based more on their availability and the patients' needs, rather than the caregivers' gender per se. Because the majority of studies reviewed were cross-sectional, small-size, and convenience samples, the possibility of selection bias in caregiver participants and general gender differences in study participation (greater female participation)[2] cannot be ruled out. Population-based, longitudinal studies, including a wider social network of caregivers of the patient, and the information about each caregiver's choice of carrying out certain care tasks, will be necessary to address this question properly.

Does gender matter in one's cancer caregiving outcomes?

The majority of studies have documented greater adverse outcomes of caregiving among female caregivers than male caregivers, due in part to female caregivers identifying daily and challenging care tasks as their job while juggling other existing social role demands.[36–38, 40–49] This supports role identity theory and role strain theory. Whether female caregivers' disproportionate burden of carrying out the cancer caregiving role is due to either lack of resources and greater demands in the family or closer relationships among females in general (according to transactional stress theory) remains an open question. Most of the studies that provided support for the transactional stress theory did not test the effects of gender on the relations of demands and resources with the outcomes that were measured. Investigating the role of gender as a moderator or mediator of the relations of caregivers' demographic and psychosocial characteristics with outcomes of caregiving experience is worth further attention.

Does caregivers' gender matter in their patients' outcomes, and vice versa?

The majority of emerging studies in cancer caregiver research have examined the impact of cancer at the interpersonal, dyadic level. The findings have affirmed that gender matters here, supporting the role of interpersonal characteristics, such as attachment orientation, caregiving motives, and interdependence between caregivers and their patients, as being related not only to one's own outcomes but also the partners'. However, again knowledge about the role of gender in the dyadic associations is lacking, due mainly to the focus of existing dyadic research on patients with gender-specific cancers and their heterosexual caregivers, which prevents differentiating gender effects from patient-vs-caregiver role effects.

Role of Gender in Cancer Caregiving Research

The overall gender-related findings from the studies reviewed here are similar to those from the general caregiver research, which has come mainly from dementia or frail elder care.[2] Namely, females are more likely to be involved in caregiving; and female spousal caregivers are more likely to report greater psychological distress. However, cancer caregiving has a trajectory and corresponding burdens to family caregivers that differ from those of other chronic diseases.[4] Family members often face sudden diagnosis of cancer in the family bringing immediate turmoil. Family caregivers are also "on call" throughout different phases of cancer survivorship; the patient's need for care tends to be sporadic, peaking around time of diagnosis and treatment, and again at the end-of-life phase. Given this trajectory, who is likely to become a family cancer caregiver depends heavily upon who is immediately available and present. This is most likely an adult living with the patient in the same household or nearby for managing practical concerns, while for managing emotional and psychosocial concerns it could be any family member or close friend. Gender of the caregiver at this phase of the illness trajectory most likely depends on what kind of care tasks are required, rather than the caregivers' gender.

Cancer caregivers also often move in and out of caregiving over several years during the care recipient's illness trajectory—as cancer remits for years but in some cases recurs.[4] Some caregivers, however, remain actively involved in cancer care several years after initial diagnosis. Actively providing care years after the initial diagnosis must be especially stressful, because it may bring back the original distress in addition to the current difficulties of caregiving.[75] Other caregivers become bereaved, when the patients' survivorship ends. Of course, many survivors remain in remission several years after diagnosis, so their family caregivers become former caregivers. All of these issues emphasize the importance for future studies to address unanswered questions regarding the role of gender across these various phases and trajectory of cancer.

Another factor characterizes the caregiving situation is the interdependence between patients and their caregivers. Relationship-oriented gender theories thus have particular relevance in understanding the experiences and consequencies of adult cancer caregiving. However, most studies examining caregiving outcomes at the relational level have looked at breast or prostate cancer patients and their heterosexual spousal caregivers. This does not allow distinguishing gender effects from patient-vs-caregiver role effects. Studying patients with non-gender specific cancer and their caregivers of any gender will help to address the role of gender in cancer caregiving at the relational level.

Most of the studies have also examined the negative impact of cancer, such as psychological distress. Having cancer in the family and losing family member to cancer also envoke resilence. Examining the potential positive impact of cancer, such as benefit finding, posttraumatic growth, and stress-related growth;[51–53] and the role of gender in such phenomena will provide a fuller picture of the role of gender in cancer caregiving. Longitudinal studies with large cohorts of cancer caregivers from diverse backgrounds both socioculturally and in terms of life stage will be crucial to guide the future of gender-oriented cancer caregiving research reflecting many understudied, hidden faces of family cancer caregivers.

It is also important to note that all existing studies that were reviewed here relied on self-reports. The greater distress of females (both caregivers and patients) may be attributable to sex differences in stress regulation processes.[79] Systematic investigation of the role of gender and biological sex in cardiovascular, immunological, and neuroendocrinological stress regulatatory processes may shed light on better understanding of gender disparities in cancer caregiving.

Clinical Implications

Although still small in number, studies reviewed suggest that gender theories provide useful guidance for identifying factors associated with caregiving outcomes and implementing appropriate screening for such factors and developing adequate psychosocial interventions to address them. For example, since the trajectory of caregivership relies on the patients' illness prognosis, not the caregivers' gender, broad stress-coping theories, such as transactional stress theory, would be applicable to describing and predicting caregiving processes and outcomes.

Traditional cognitive behavioral stress management interventions and problem-solving interventions[80] could be effective in helping cancer caregivers throughout their variable trajectory, by providing generalizable skills and knowledge that are adaptive to unforeseeable illness trajectories of their patients. Such intervention programs should educate male caregivers on how to effectively provide emotional support to their female patients. Educating caregivers regarding how best to utilize alternate or additional resources for obtaining emotional support for themselves may protect caregivers from compromised quality of life due to cancer in the family. Couple-based approaches that address psychological distress, couple communication, and relationship functioning of cancer patients and their caregivers,[80] could also be useful. These are another broad topic in which gender and gender-related factors may play important roles in various aspects of the quality of life of the caregiver population. They thus should be incorporated in the development of evidence-based interventions for cancer caregivers. The extent to which couple-based interventions are applicable to non-spousal pairs and same-sex caregiver-patient dyads also needs to be investigated.

Study Limitations

This review was restricted to adults (either patients or caregivers), published (as opposed to grayarea or unpublished), and published in English, all of which limit the generalizability of our conclusions. The gender theories selected to evaluate current cancer caregiving studies were chosen from the literature of psychology. Gender theories also exist in other diciplines, and the nuances of the theories from different diciplines can be quit different. Future investigations of cancer caregiving involvement and consequences of caregiving for pediatric patients and of child caregivers by multiple sites and multiple cultures are warranted. Future studies examining the roles of fluidity and plurality of gender identity, and biological sex in involvement in cancer caregiving and its health concequences are also warranted.

Conclusions

Gender theories have been well established and gender differences in psychological distress when facing cancer (regardless of patient vs caregiver role) have been solidly documented. Despite lack of gender-theory-driven research in cancer caregiving and Psycho-Oncology in general, the utility of gender theories in identifying sub-groups of caregiver-patient dyads who are vulnerable to the adverse effects of cancer in the family and in developing evidence-based interventions is promising. Integration of the issues related to the medical trajectory of the patients, lifespan stage of the caregivers, sociocultural resources and risk factors to this emerging area of gender-oriented research and practice in cancer caregiving is warranted for improving quality of life of persons touched by cancer and minimizing premature morbidity and mortality.

Acknowledgement:

Writing of this manuscript was supported by American Cancer Society Research Scholar Grants (121909-RSG-12-042-01-CPPB) and National Institute of Nursing Research (R01NR016838) to the first author. The authors extend their appreciation to all the families who participated in this investigation. The first author dedicates this research to the memory of Heekyoung Kim.

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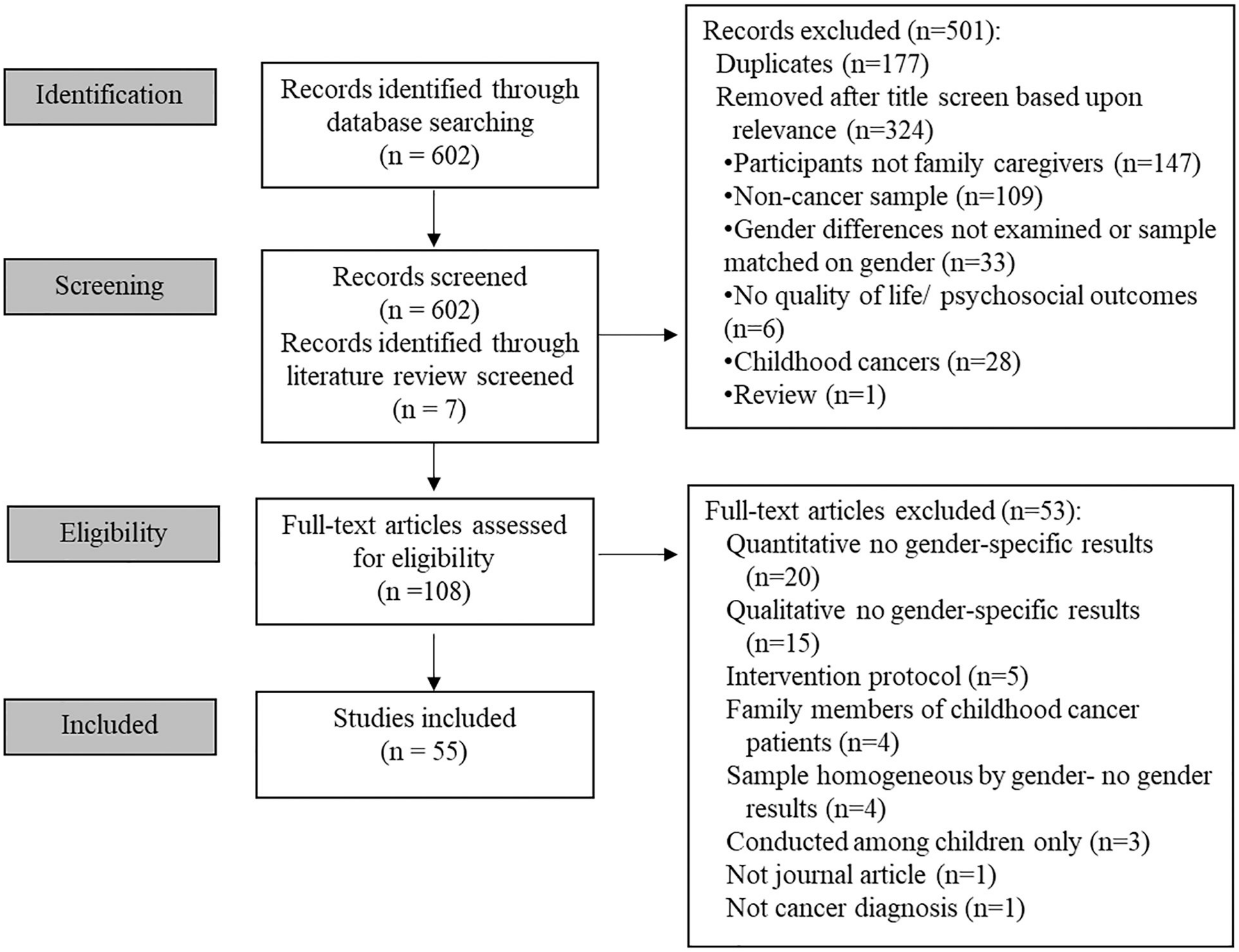

Figure 1:
PRISMA flowchart

Table 1.

Study characteristics and gender findings

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
• Caregiver Selection								
Ref #	**Authors**	**Year**	**% Female (Sample Size)** **Study Design**	**Caregiver Demographics**	**% Female (Sample Size)**	**Patient Demographics**	**Results**	**Supporting Theories**
19	Luszczynska et al.	2007	62.4% (224) Both caregivers & patients; Longitudinal; Quantitative	<u>Mean age (SD):</u> 59.4 (9.6) <u>Race/Ethnicity:</u> Not reported-German sample <u>Relationship to patient:</u> 100% Spouse	37.6% (173)	<u>Mean age (SD):</u> 61.9 (8.5) <u>Race/Ethnicity:</u> Not reported-German sample <u>Diagnosis:</u> 27.1% Colorectal, 12.3% Stomach, 10.4% Liver/ Gallbladder, 7.5% Lung/Bronchi, 22.6% Other <u>Stage:</u> 22.5% I, 22.5% II, 27.5% III, 27.5% IV	• Both male and female caregivers reported providing emotional support before surgery. • Male caregivers provided less support than females by 1- and 6- months post-surgery. • Both male and female patients reported receiving emotional support before and 1-month post-surgery. • Female patients received less support than male patients by 6-months post-surgery. • Support provided by male caregivers was associated with support received by female patients. • For dyads in which caregivers were females, the	"Doing Gender"; Gender Role Perspective; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							relation between support received and support provided was stronger than for dyads where caregivers were males.	
25	Lopez et al.	2012	0% (15) Both caregivers & patients; Longitudinal; Qualitative	Mean age (SD): 60 (13) Race/Ethnicity: 100% White/Caucasian Relationship to patient: 100% Spouse	100% (15)	Mean age: Not reported Race/Ethnicity: Not reported Diagnosis: 67% Gynecologic, 33% Breast Stage: Not reported	• Male caregivers evaluated caregiving tasks, such as housework, cooking, gardening, and shopping, as well as communicating about spouses' cancer with other family members, as incongruent with masculinity and challenging. • Male caregivers reported difficulty expressing emotions and asking for support. • Male caregivers reported worrying about finances because they could not work while their spouses were sick. • By the 9-months post-diagnosis, male caregivers reported being more prepared for the tasks	"Doing Gender"; Role Identity Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							that were incongruent with their gender role (e.g., ironing, cooking).	
26	Ussher et al.	2013	64.2% (53) Caregivers only; Cross-sectional; Qualitative	Mean age: 56 Race/Ethnicity: 96% Caucasian, 4% Asian Relationship to patient: 77% Partner, 8% Parent, 6% Friend, 4% Child, 4% Sibling	Not reported	Mean age: Not reported Race/Ethnicity: Not reported Diagnosis: 25% Breast, 14% Brain, 14% Respiratory, 12% Colorectal, 12% Prostate, 23% Other Stage: Not reported	• Female caregivers reported greater negative relationship changes with the patient, self-neglect, social isolation, anxiety, poorer physical health, and yet greater personal strength/ growth. • Male caregivers reported increased domestic responsibilities, and improved relationship with the patient. • Both female and male caregivers reported challenges with gender incongruent tasks: for females: gardening, household maintenance, and driving; for males: housework (e.g., cooking and cleaning).	Role Identity theory; Role Strain Theory; Transactional Stress Theory
27	Segrin et al.	2010	54.4% (215)	Mean age (SD): 52.7 (13.3) Race/Ethnicity: 68.1% White,	67.4% (215)	Mean age: Not reported Race/Ethnicity: Not reported	• Depressive symptoms, positive and negative affect,	“Doing Gender”; Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
			Caregivers only; Cross-sectional; Quantitative	28.1% Latino/a, Relationship to patient: 71.2% Spouse, 5.1% Sibling, 4.7% Parent, 11.9% Other		Diagnosis: 67.4% breast, 32.6% prostate Stage: 34% I, 42% II, 18% III	anxiety, and relationship satisfaction did not vary by the types of caregivers' familial relationship to the patient. • Worse relationship satisfaction related to higher levels of distress, regardless of caregivers' gender. • Female caregivers reported greater depressive symptoms than male caregivers, which was in part explained by their higher stress levels.	
28	Kim & Carver	2007	51.9% (400) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 55.7 (10.9) Race/Ethnicity: 91.5% Caucasian Relationship to patient: 65% Spouse	47.9% (Not reported)	Mean age (SD): 55.5 (11.0) Race/Ethnicity: 95% Caucasian Diagnosis: 25% Prostate, 23% Breast, 13% Colorectal, 30% Other Stage: Not reported	• Female caregivers were more involved in tangible and medical care. • For only male caregivers, greater avoidant attachment related to less frequent provision of emotional care to the patients. • For only female caregivers, greater anxious attachment related to more frequent provision of	Attachment theory; Gender Role Perspective;

Study			**Caregiver Characteristics**		**Patient Characteristics**		**Gender Findings**	
							tangible care to the patients. • No gender differences in perceived difficulty with different types of care provision.	
29	Oliffe et al.	2015	100% (15) Both caregivers & patients; Cross-sectional; Qualitative	Mean age (SD): 66 Race/Ethnicity: 100% Canadian/European Relationship to patient: 100% Spouse	0% (15)	Mean age (SD): 72 Race/Ethnicity: 100% Canadian/ European Diagnosis: 100% Prostate Stage: Not reported	• Both male patients and their female spouses considered females' support provision as normative. • Female caregivers aimed to provide support that would allow male patients to maintain their gender-normed behaviors (e.g., decision making and control) • Both male patients and their female spouses reported that male patients sought and received more emotional support from their female spouses, yet benefited from camaraderie from other male patients. • Female caregivers reported	Gender Role Perspective.

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							providing support congruent with their gender norms (i.e., primarily emotional)	
30	Perz et al.	2011	67.3% (329) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 54.8 (13.0) Race/Ethnicity: 81.6% Australian/White European, 4.0% Asian, 14.4% unknown Relationship to patient: 73.3% Partner, 11.2% Child, 7.5% Parent, 2.9% Sibling, 2.7% Friend, 2.4% Other	67.3% (369)	Mean age (SD): 58.8 (13.4) Race/Ethnicity: Not reported Diagnosis: 13.9% Breast, 11.5% GI, 7.4% Hematological, 6.0% Prostate, 5.6% Gynecological, 27.6% Other, 27.9% Missing Stage: 11.4% I-II, 5.1% III-IV, 19.1% Unknown, 18.3% Unstaged	• Female caregivers were more likely to provide care for colorectal/ digestive cancer, whereas male caregivers for breast cancer. • Male caregivers were dominantly more likely to be spouses/ partners of the patients, whereas female caregivers were spouses/ partners, parents, and offspring of the patients. • No gender differences in hours of caregiving and in companionship with the patient, receipt of social support, responsibilities for housework or child care. • Female caregivers reported significantly higher levels of anxiety, burden of care, and unmet needs.	Gender Role Perspective; Role Strain Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							• Female caregivers' greater disruptions in schedules, greater health problems, and higher levels of emotional and spiritual unmet needs were attributable to their greater anxiety.	
31	Kim et al.	2008b	50.6% (168) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 59.7 (9.8) Race/Ethnicity: 95.2% White/Caucasian Relationship to patient: 100% Spouse	49.4% (168)	Mean age (SD): 60.2 (10.2) Race/Ethnicity: 90.5% Caucasian Diagnosis: 49.4% Breast, 50.6% Prostate Stage: Not reported	• Caregivers' own psychological distress related to their own mental and physical health, regardless of caregivers' gender. • Female caregivers' greater distress related to their male patients' poorer physical health. • Male caregivers reported poorer physical health when their female patients had greater distress. • Female caregivers whose psychological distress was dissimilar with their male patients reported poorer mental health. • Male caregivers whose	Gender Role Perspective; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							psychological distress was dissimilar with their female patients reported better physical health.	
32	Jenewein	2008	100% (31) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 55.4 (10.8) Race/Ethnicity: Not reported-Swiss sample Relationship to patient: 100% Spouse	0% (31)	Mean age (SD): 58.2 (10.1) Race/Ethnicity: Not reported-Swiss Sample Diagnosis: 100% Oral Stage: 54.8% I-II, 45.2% III-IV	• Female caregivers reported levels of quality of life higher than population norms. • Caregivers and patients reported comparable levels of quality of life. • For female caregivers (but not male patients), higher perceived marital quality related to better quality of life and lower levels of depression. • Greater discrepancy in marital satisfaction rating related to female caregivers' (not male patients') greater psychological distress.	Gender Role Perspective; Emotional Closeness Perspective; Interdependence Theory
33	Dorros	2010	26% (95) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 51.7 (14.8) Race/Ethnicity: 87% White, 12% Hispanic Relationship to patient: 77% Spouse 17% Daughter,	100% (95)	Mean age (SD): 54.1 (10.6) Race/Ethnicity: 85% White, 14% Hispanic Diagnosis: 100% Breast Stage:	• For both female patients and their male caregivers, one's own depression, stress, and physical health	Gender Role Perspective; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
				6% Other		33% I, 53% II, 14% III	were correlated to each other. • Female patients' depression and stress related to their male caregivers' lower physical health. • Relation between female patients' depression and their male caregivers' health was stronger when the female patients had greater stress.	
34	Wadhwa et al.	2013	64.9% (191) Both caregivers & patients; Cross-sectional; Quantitative	Mean age: 57 Race/Ethnicity: 82.2% European Relationship to patient: 83.8% Spouse, 11% Offspring, 5.2% Other	46.6% (191)	Mean age: 61 Race/Ethnicity: 84.8% European Diagnosis: 37.1% GI, 17.8% Genitourinary, 17.3% Breast, 16.2% Lung, 11% Gynecologic Stage: Not reported	• Female caregivers spent more hours for caregiving and made more changes in their work situations since initiation of their caregiving role. • Female caregivers reported poorer mental health and worse emotional well-being. • Changes in work situations, spending more days on caregiving, and caring for patients' with worse emotional well-being negatively related to	Gender Role Perspective; Lifespan Perspective; Role Strain Theory; Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							caregivers' mental health. Gender effects on these associations were not tested.	
35	Gaugler et al.	2008	72.1% (183) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 56.1 (10.6) Race/Ethnicity: 74.3% White Relationship to patient: 71.6% Spouse	Not reported	Mean age (SD): 62.0 (12.6) Race/Ethnicity: Not reported Diagnosis: 44% Lung, 27% Head/Neck, 21% Brain, 18% Gastrointestinal, 15% Breast, 13% Bone/Leukemia, 13% Prostate, 9% Pancreas/Liver, 8% Gynecological, 3% Skin Stage: Not reported	• Employed female caregivers had higher education than unemployed male caregivers. • Employed female caregivers were younger than unemployed (male and female) caregivers. • Male (employed or not) caregivers were more likely to care for patients with gynecological or breast cancer than female (employed or not) caregivers. • Female caregivers (regardless of employment status) reported their care recipients had higher instrumental activities of daily living needs and they provided more instrumental support to the patients, compared with unemployed	Role Identity Theory; Role Strain Theory; "Doing Gender"

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							and employed male caregivers. • Employed female caregivers reported more exhaustion and fatigue, compared with employed male caregivers.	
• Caregiver Outcomes at the Individual Level								
36	Kim et al.	2006	55.7% (429) Caregivers only; Cross-sectional; Quantitative	Mean age: 59 Race/Ethnicity: 96% Caucasian Relationship to patient: 100% Spouse	Not reported	Mean age: Not reported Race/Ethnicity: Not reported Diagnosis: 10 common cancers Stage: Not reported	• Female caregivers reported greater caregiving stress. • Male caregivers reported higher caregiver esteem, which related to less caregiving stress. • The patient's poorer psychosocial functioning related to higher caregiving stress only for male caregivers. • The patient's poorer physical functioning related to higher caregiving stress for both male and female patients.	Role Identity Theory
37	Hagedoorn	2002	47.1% (68) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 54 (11) Race/Ethnicity: Not reported - Dutch sample Relationship to patient: 100% Partner	52.9% (68)	Mean age (SD): 53 (11) Race/Ethnicity: Not reported - Dutch sample Diagnosis: 21% Breast, 18% Intestinal,	• Male caregivers were more likely to be employed than female caregivers.	Role Identity Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
						16% Skin, 9% Larynx, 6% Bone, Stage: Not reported	• Female caregivers were more likely to be responsible for housekeeping. • Female caregivers reported stronger feelings of personal accomplishment yet greater distress from providing care. • No gender differences in caregiver self-efficacy and support provision. • For female caregivers, perception they did not support patients enough and they were not efficient related to their greater distress, which was not the case for male caregivers.	
38	Kim et al.	2007	61.8% (448) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 54.8 (12.6) Race/Ethnicity: 94.2% Caucasian Relationship to patient: 78.3% Spouse; 21.7% Offspring	52.8% (448)	Mean age (SD): 60.0 (11.5) Race/Ethnicity: 93.1% Caucasian Diagnosis: 21.2% Prostate, 21.0% Breast, 14.7% Colorectal, 10.3% Lung, 25.3% Other Stage: Not reported	• Male caregivers, especially spouses, appraised caregiving more enhancing their self-esteem. • Male caregivers reported less caregiving stress than female caregivers. • Adult daughters appraised	Role Strain Theory; Lifespan Perspective; Transactional Stress Theory

Study			**Caregiver Characteristics**		**Patient Characteristics**		**Gender Findings**	
							caregiving most stressful. • Adult son caregivers appraised caregiving the least stressful. • Gender differences in caregiving stress were not significant among spouses. • Male caregivers reported lower levels of psychological distress and higher mental functioning than female caregivers.	
39	Kim et al.	2008a	100% (98) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 40.8 (11.7) Race/Ethnicity: 89% Caucasian Relationship to patient: 100% Adult daughters	100% (98)	Mean age (SD): 67.1 (12.0) Race/Ethnicity: 91% Caucasian Diagnosis: 25% Breast, 15% Colorectal, 13% Ovarian, 28% Other Stage: Not reported	• Female patients' higher levels of distress related to their own lower mental and physical health. • Adult daughter caregivers' distress related to their own lower mental health. • Female patients' distress related to their caregiving adult daughters' poorer physical health, yet adult daughters' better mental health.	Lifespan Perspective; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
40	Ussher & Perz	2010	68% (484) Caregivers only; Cross-sectional; Qualitative	Mean age (SD): 55.1 (13.2) Race/Ethnicity: 94.4% Caucasian, 4.6% Asian, 0.8% Aboriginal Relationship to patient: 71.9% Partner, 11.9% Child, 14.2% Other	Not reported	Mean age (SD): 59.2 (11.6) Race/Ethnicity: Not reported Diagnosis: 17.3% Breast, 12.9% Colorectal, 10.6% Hematological, 48% Other Stage: 8.9% Early, 38.3% Advanced	• Both male and female caregivers reported using self-silencing coping (i.e., inhibiting self-expression) in order to prioritize the patient's needs. • Male caregivers attributed using self-silencing to the masculinity norm that prohibited them from expressing feelings even prior to the patient's diagnosis. • Greater use of self-silencing coping related to greater anxiety for female but not male caregivers.	"Doing Gender"; Role Identity Theory; Transactional Stress Theory
41	Fitzel & Pakenham	2010	71.4% (622) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 59.5 (12.4) Race/Ethnicity: Not reported-Australian sample Relationship to patient: 84% Spouse, 12% Family	34.6% (622)	Mean age (SD): 61.4 (9.3) Race/Ethnicity: Not reported-Australian sample Diagnosis: 100% Colorectal Stage: 22% I, 26% II, 43% III, 2% IV	• Male caregivers reported lower levels of positive affect. • Use of avoidant coping and substance use were related to poorer psychological adjustment. • Gender effects on these associations were not tested.	Role Identity Theory
42	Pikler & Brown	2010	45.5% (111)	Mean age (SD): 57.5 (13.2) Race/Ethnicity*: 76.3% White,	68.8% (189)	Mean age (SD): 55.5 (11.9) Race/Ethnicity:	• Masculine or undifferentiated gender-role identity related	Role Identity Theory

Study			**Caregiver Characteristics**		**Patient Characteristics**		**Gender Findings**	
			Both caregivers & patients; Cross-sectional; Quantitative	16.3% African American/ Black, 7.4% Other <u>Relationship to patient:</u> 100% Spouse *Across patients and caregiver		See Caregiver Characteristics <u>Diagnosis:</u> Varied-distribution not reported <u>Stage:</u> Not reported	to greater depressive symptoms, compared with feminine or androgynous gender-role identity, regardless of patient vs caregiver. • Caregivers reported greater anxiety than patients, regardless of gender/sex or gender-role identity. • Gender-role identity and patient vs caregiver role status did not relate to quality of life, regardless of gender.	
43	Goldzweig et al.	2009a	61% (231) Both caregivers & patients; Cross-sectional; Quantitative	<u>Mean age (SD):</u> 69.2 (7.4) <u>Race/Ethnicity:</u> Not reported-Israeli sample <u>Relationship to patient:</u> 100% Spouse	39% (231)	<u>Mean age (SD):</u> 70.7 (6.2) <u>Race/Ethnicity</u>: Not reported-Israeli sample <u>Diagnosis:</u> 100% Colorectal <u>Stage:</u> 14% I, 61% II, 23% III	• Both male patients and caregivers reported higher distress than their wives (regardless of patient vs caregiver). • Male caregivers had the highest levels of depression and distress. • Male patients and caregivers reported receiving higher levels of spousal support,	Role Identity theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							compared with females.	
44	Baider et al.	2003	41.1% (287) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 60.0 (11.7) Race/Ethnicity: Not reported-Israeli sample Relationship to patient: 100% Spouse	48.9% (287)	Mean age (SD): 59.9 (11.6) Race/Ethnicity: Not reported-Israeli sample Diagnosis: 41% Prostate, 59% Breast Stage: 100% I-III	• Male caregivers were more distressed than female caregivers. • Male caregivers reported similar levels of distress as patients (both male and female) • When patients were male (but not female), one's distress related to poorer physical functioning in both patients and caregivers. • When patients received lower levels of support, both patients and partners reported higher distress, regardless of caregivers' gender.	Role Identity Theory; Transactional Stress Theory
45	Goldzweig et al.	2009b	0% (153) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 65.3 (10.3) Race/Ethnicity: Not reported-Israeli sample Relationship to patient: 100% Spouse	0% (239)	Mean age (SD): 67.9 (9.4) Race/Ethnicity: Not reported-Israeli sample Diagnosis: 100% Colorectal Stage: 17.9% 0-I, 60.3% II, 21.8% III	• Among males, no patient vs caregiver differences in distress, anxiety, and posttraumatic stress symptoms. • Male caregivers reported higher levels of depression than male patients.	Role Identity Theory; "Doing gender" Theory; Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							- Male caregivers reported less receipt of social support than male patients. - Marital status did not relate to distress among caregivers, and did among patients: unmarried male patients reported the highest levels of distress.	
46	Ezer et al.	2011	100% (81) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 63.2 Race/Ethnicity: Not reported-French Canadian sample Relationship to patient: 100% Spouse	0% (81)	Mean age (SD): 67.7 Race/Ethnicity: Not reported-French Canadian sample Diagnosis: 100% Prostate Stage: Not reported	- Female caregivers reported increasingly similar perceptions of their male patients' quality of life domains by the first year since diagnosis. - Female caregivers were less satisfied with healthcare services than male patients. - Female caregivers were more socially active than male patients. - Male patients were more distressed about their sexual relationships than female caregivers were.	Role Identity Theory
47	Tuinstra et al.	2004	65% (137) Both caregivers & patients;	Mean age (SD): 59.2 (10.3) Race/Ethnicity:	35% (137)	Mean age (SD): 59.0 (11.3) Race/Ethnicity:	- Prior to surgery, female patients reported greater	Role Identity Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
			Longitudinal; Quantitative	Not reported - Dutch sample Relationship to patient: 100% Spouse		Not reported-Dutch sample Diagnosis: 100% Colorectal Stage: Not reported	depressive symptoms than female caregivers. • Prior to surgery, male caregivers reported greater depressive symptoms than male patients. • Depressive symptoms persisted for females (regardless of patient vs caregiver), but not for males, at 3 and 6 months post-surgery. • Similarity in depressive symptom levels between patients and caregivers was not found, regardless of caregivers' gender.	
48	Spillers et al.	2008	66.8% (635) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 55.22 (12.88) Race/Ethnicity: 93.2% Caucasian Relationship to patient: 66.6% Spouse, 19.1% Adult Child, 14.3% Other	57.4% (635)	Mean age (SD): 59.2 (12.4) Race/Ethnicity: 92.1% Caucasian Diagnosis: 25% Breast, 20% Prostate, 13% Colorectal, 11% Lung, 18% Other Stage: Not reported	• Female caregivers reported greater psychological distress and poorer mental health. • Current caregiving, lack of family support, greater disrupted schedules due to caregiving, and lower caregiver competence related to greater psychological	Role Strain Theory; Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							distress and poorer mental health. • Greater caregiver guilt related to psychological distress and poorer mental and physical health • Gender differences in these association were not tested.	
49	Papastavrou et al.	2009	54.6% (130) Both caregivers & patients; Cross-sectional; Quantitative	<u>Mean age (SD):</u> 50.7 (13.4) <u>Race/Ethnicity:</u> Not reported-Greek sample <u>Relationship to patient:</u> 36.9% Spouse, 14.6% Son, 22.3% Daughter, 15.4% Sibling, 10.8% Other	60% (130)	<u>Mean age (SD):</u> 60.1 (15.0) <u>Race/Ethnicity:</u> Not reported-Greek-Cypriot sample <u>Diagnosis:</u> 25.4% Breast, 16.9% Colon, 13.1% Gynecological, 10.8% Lung, 25.7% Others <u>Stage:</u> 8.5% Advanced	• Female caregivers reported greater caregiving burden (health and financial) than male caregivers. • Female caregivers reported greater levels of depression than male caregivers. • Older patient age and lower caregiver income related to greater caregivers' depression. • Use of wishful thinking of caregivers related to their greater caregiving burden, whereas use of problem-solving focused coping related to less caregiving burden. Gender	Role Strain Theory; Transactional Stress theory

Study			**Caregiver Characteristics**		**Patient Characteristics**		**Gender Findings**	
							effects on this association were not tested. • Less use of assertive coping strategy of caregivers related to their greater depressive symptoms. Gender effects on this association were not tested.	
50	Alptekin et al.	2010	53.3% (126) Both caregivers & patients; Cross-sectional; Quantitative	<u>Mean age (SD):</u> 45.0 (11.6) <u>Race/Ethnicity:</u> Not reported-Turkish sample <u>Relationship to patient:</u> 46.8% Spouse, 36.5% Child, 12.7% Sibling, 4% Other	66.7% (126)	<u>Mean age (SD):</u> 56.4 (11.4) <u>Race/Ethnicity:</u> Not reported-Turkish sample <u>Diagnosis:</u> 29.4% Gastrointestinal, 25.4% Gynecologic, 25.4% Breast, 11.1% Respiratory System, 8.7% Other <u>Stage:</u> Not reported	• Female caregivers were primarily housewives who spent most of their time with the patient. • About 70% of caregivers live with the patients; 60% shared the caregiving responsibility with someone else. Gender effects on the prevalence were not tested. • Female caregivers had lower quality of life than male caregivers in the psychological and social domains but not in the physical health and environment domains of quality of life. • Employed (compared to unemployed)	Role Enhancement Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							caregivers had higher quality of life (psychological domain), regardless of gender. • Caregivers' quality of life was higher when the patient was female than when the patient was male.	
51	Kang et al.	2013	58.5% (501) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 53.2 (12.5) Race/Ethnicity: Not reported-Korean sample Relationship to patient: 46.5% Spouse	47.2% (492)	Mean age (SD): 64.3 (13.7) Race/Ethnicity: Not reported-Korean sample Diagnosis: 18.9 % Lung, 17.9% Gastric, 63% Other Stage: Not reported	• Among bereaved caregivers, females were more likely than males to report higher appreciation of others and greater reprioritization of their own values and attitudes about life. • Receiving bereavement support services related to benefit findings in bereavement experience. Gender differences in this association were not tested.	Role enhancement theory
52	Kim et al.	2008	50.5% (314) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 56.5 (10.6) Race/Ethnicity: 90.8% White Relationship to patient: 65.5% Spouse	Not reported	Mean age (SD): Not reported Race/Ethnicity: Not reported Diagnosis: 25% Breast, 24% Prostate, 11% Colorectal,	• Male caregivers scored higher on external caregiving motives. • Female caregivers	Attachment Theory; Self-Determination Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
						11% Non-Hodgkin's Lymphoma, 14% Other <u>Stage</u>: Not reported	reported greater levels of benefit finding. • For only female caregivers, attachment anxiety was related to lower benefit finding, autonomous motives for caregiving was related to higher benefit finding, benefit finding was related to more severe cancer diagnosis of the patient, and life satisfaction was related to less severe cancer diagnosis. • No gender differences were found in other relations among attachment qualities, caregiving motives, and psychological adjustment.	
53	Künzler et al.	2014	61% (154) Both caregivers & patients; Longitudinal; Quantitative	<u>Mean age (SD):</u> 56.8 (14.4) <u>Race/Ethnicity:</u> Not reported-Swiss sample <u>Relationship to patient:</u> 100% Spouse	39% (154)	<u>Mean age (SD):</u> 57.5 (12.4) <u>Race/Ethnicity:</u> Not reported-Swiss Sample <u>Diagnosis:</u> 18% Hematologic, 17.9% Lung, 8.5% Liver, 15.9%, Colorectal, 10.7% Genitourinary, 22.5% Other <u>Stage:</u> 100% 0-IV	• Females, regardless of patient vs caregiver, reported more personal growth than males, over the span of six months of cancer treatment. • Female patients reported less personal growth at six months after diagnosis	Interdependence Theory; Role Enhancement Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							and when treatment was curative. • Caregivers reported similar levels of personal growth with their patients. • The greater personal growth reported by female caregivers, the less personal growth reported by male patients who were on curative treatment. • In couples with male patients, the similarity in personal growth scores between patients and caregivers was stable at 6 and 12 months post-diagnosis. • In couples with female patients, the similarity in personal growth scores between patients and caregivers increased from 6 to 12 months post-diagnosis.	
54	Barnoy et al.	2006	54.1% (98) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 53.8 (13.8) Race/Ethnicity: Not reported-Israeli sample Relationship to patient: 100% Partner	45.9% (98)	Mean age (SD): 53.8 (13.8) Race/Ethnicity: Not reported-Israeli sample Diagnosis: Mix of Breast, Ovarian, Prostate, Colon, Lung, Liver, Pancreas, Brain	• No gender differences in caregivers' coping styles of monitoring (i.e., paying attention to stressors) and blunting (i.e., avoiding stressors).	Transactional Stress Theory; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
						<u>Stage:</u> Not reported	• Among caregivers scored low on monitoring, their female patients reported greater psychological distress and lower well-being. • Among male caregivers scored high on monitoring, their female patients scored low on monitoring. • Dissimilarity in blunting between patients and caregivers related to greater psychological distress of male patients. • Similarity in blunting between patients and caregivers related to patients' better well-being but caregivers' poorer well-being, regardless of patients' gender. • Female caregivers experienced more psychological distress than male caregivers.	

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
55	Colgrove et al.	2007	54.3% (403) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 59 (11) Race/Ethnicity: 95.80% White Relationship to patient: 100% Spouse	Not reported	Mean age (SD): Not reported Race/Ethnicity: Not reported Diagnosis: 26% Prostate, 23% Breast, 15% Colorectal, 32% Other Stage: Not reported	• Female caregivers reported poorer mental health than male caregivers. • Female and male caregivers reported similar levels of physical health. • Caregiving stress related to poorer mental functioning only among caregivers with a low level of spirituality. Caregiving stress related to poorer physical functioning only among caregivers with a high level of spirituality. The moderating effects of spirituality were found for both sexes.	Transactional Stress Theory
56	Dunn et al.	2012	71.8% (85) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 62.5 (10.5) Race/Ethnicity: 80% Caucasian, 10.6% African American, 4.7% Asian, 4.7% Other Relationship to patient: 100% Primary caregiver	44.6% (167)	Mean age (SD): 60.9 (11.6) Race/Ethnicity: 71.9% Caucasian, 15.0% African American, 7.2% Asian, 5.9% Other Diagnosis/Stage: 48.8% Prostate, 38.1% Breast, 13.2 Other Stage: Not reported	• Females (regardless of patient or caregiver) reported higher levels of anxiety consistently during the four months after the completion of radiation therapy. • Other risk factors for high anxiety were being younger, ethnic minority, having children	Role Strain Theory, Transactional Stress Theory, Lifespan Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							at home, high trait anxiety and depressive symptoms at the initiation of radiation therapy. • Potential synergistic effects of gender with these variables were not tested.	
57	Friðriksdóttir et al.	2011	62% (223) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 56 (13.6) Race/Ethnicity: Not reported-Icelandic sample Relationship to patient: 64% Spouse, 36% Other	Not reported	Mean age: Not reported Race/Ethnicity: Not reported-Icelandic sample Diagnosis: Not reported Stage: Not reported	• Female caregivers reported greater number of unmet needs than male caregivers. • Female caregivers rated their needs more important than male caregivers did. • Female caregivers reported greater anxiety than male caregivers. • Both anxiety and depression the highest during 1–5 post diagnosis; both having greater number of important needs and having needs being met related to better quality of life; and greater unmet needs related to greater anxiety. • Gender or patient vs caregiver	Lifespan theory, Role Strain Theory, Transactional Stress theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							differences in these associations were not tested.	
58	Gustavsson-Lilius et al.	2007	55.3% (123) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 59 (9.1) Race/Ethnicity: Not reported-Finnish sample Relationship to patient: 100% Spouse	44.7% (123)	Mean age (SD): 59 (8.4) Race/Ethnicity: Not reported-Finnish sample Diagnosis: 43.1% Beast, 27.6% Prostate, 9.7% Gynecological, 8.9% Gastrointestinal Stage: Not reported	• Female caregivers reported higher levels of depression and anxiety than male caregivers, whereas no gender differences found in patients. • Caregivers' sense of coherence did not change between the time of diagnosis and 14 months post-diagnosis, whereas patients' increased, regardless of gender. • Caregivers emerged to report similar levels of sense of coherence, anxiety, and depression to the levels of their patients' by 14 months post diagnosis. • Gender differences in caregivers' anxiety and depression at the patients' diagnosis persisted at 14	Transactional Stress Theory; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							months post diagnosis.	
59	Hagedoorn	2000	59.5% (173) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 56.4 (9.1) Race/Ethnicity: Not reported - Dutch sample Relationship to patient: 100% Partner	40.46% (173)	Mean age (SD): 56.8 (9.0) Race/Ethnicity: Not reported - Dutch sample Diagnosis: 25.4% Head-Neck, 25.4% Multiple myeloma, 19.2% Other Stage: Not reported	- Females (regardless of caregiver vs patient) reported greater depressive symptoms than female healthy control. - Male caregivers reported comparable levels of depressive symptoms and quality of life with male healthy controls. - Male patients reported greater depressive symptoms and poorer quality of life than female patients and female caregivers.	Transactional Stress Theory; Gender Role Perspective
60	Haley	2003	79% (80) Caregivers only; Cross-sectional; Quantitative	Mean age: 70 Race/Ethnicity: 84% Caucasian Relationship to patient: 100% Spouse	Not reported	Mean age: 70 Race/Ethnicity: Not reported - US sample Diagnosis: 50% Dementia, 50% Cancer Stage: Not reported	- Female caregivers reported higher depression and worse life satisfaction. - Other risk factors for depression and poorer life satisfaction included poorer caregivers' own health, lack of finding benefits from caregiving, greater caregiving	Transactional Stress theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							stress, and lack of social resources. • Moderating effects of gender were not tested.	
61	Künzler et al.	2011	63% (137) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 57 (14)* Race/Ethnicity: Not reported-Swiss sample Relationship to patient: 100% Spouse * Across patients and caregivers	47% (218)	Mean age: See caregiver age Race/Ethnicity: Not reported-Swiss Sample Diagnosis: 19% Breast, 18%, Hematological, 18% Lung, 45% Other Stage: 18% I, 18% II, 26% III, 38% IV	• Females (regardless of patient vs caregiver) reported poorer quality of life. • Female caregivers reported the worst quality of life. • Among married patients, males reported better somatic quality of life. • Female caregivers had worse quality of life than male caregivers in terms of health-related mental quality of life, satisfaction with coping as a dyad, anxiety, and intrusive thoughts.	Transactional Stress theory
62	Langer et al.	2003	50.4% (131) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 43.1 (9.8) Race/Ethnicity: 90.6% Caucasian, 4.7% Hispanic, 4.8% Other Relationship to patient: 100% Spouse	51.1% (131)	Mean age (SD): 42.9 (9.3) Race/Ethnicity: 94.7% Caucasian, 4.0% Hispanic Diagnosis: 36.6% CML (Chronic Myeloid Leukemia), 19.1% Acute Leukemia (AL), 44% Other Stage: Not reported	• Caregivers reported greater anxiety and depression, compared with their patients and healthy controls. • Caregiver-patient dyads reported similar levels of marital	Interdependence theory; Transactional Stress theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							satisfaction prior to transplant, which became incongruent by 1 year post-transplant. • Female caregivers reported greater increases in anxiety and depression, and greater decreases in marital satisfaction in the six months following stem cell transplant. • Female gender of caregivers (not patients' physical or psychosocial characteristics) was the only predictor of caregivers' poorer marital satisfaction.	
63	Langer et al.	2010	47.9% (121) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 43.5 (9.8) Race/Ethnicity: 90.1% Caucasian, 5% Hispanic, Relationship to patient: 100% Spouse	52.1% (121)	Mean age (SD): 43.7 (9.0) Race/Ethnicity: 92.6% Caucasian, 5.8% Hispanic Diagnosis: 35.5% CML, 18.2% AL, 46.3% Other Stage: Not reported	• Female caregivers reported decreased marital satisfaction from pre-to 5 years post-stem-cell-transplant, whereas patient (regardless of gender) and male caregivers reported stable levels of marital satisfaction. • No gender differences in marital	Interdependence Theory; Transactional Stress theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							satisfaction prior to stem cell transplant. • No gender differences in marital dissolution after transplant were reported.	
64	Litzelman & Yabroff	2015	46.9% (910) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 61.5 (9.8) Race/Ethnicity: 65.5% White non-Hispanic 34.5% Other Relationship to patient: 100% Spouse	53.1% (910)	Mean age (SD): 60.4 (13.1) Race/Ethnicity: 64% White non-Hispanic 35% Other Diagnosis: 21.1% Prostate, 18.8% Breast, 5.3% Colorectal, 10.6% Multiple, 36.0% Other Stage: Not reported	• Caregivers' depressed mood predicted patient's depressed mood 11 months later. • The effect of caregivers' depressed mood on the patients' depressed mood was stronger for female patients. • Caregivers' better mental and physical functioning predicted decreased depressive mood of their patients 11 months later, regardless of caregivers' gender. • Female cancer patients were more likely to report increased levels of depression over a year follow-up.	Transactional Stress Theory; Interdependence theory
65	Nijboer et al.	2000	64% (148) Caregivers only; Longitudinal; Quantitative	Mean age (SD): 63 (11) Race/Ethnicity: Not reported - Dutch sample	Not reported	Mean age: Not reported Race/Ethnicity: Not reported - Dutch sample	• Female caregivers reported greater loss of physical strength than	Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
				Relationship to patient: 100% Partner		Diagnosis: 100% Colorectal Stage: Not reported	male caregivers at the time of patients' diagnosis and 6 months later. • Female caregivers reported lower self-esteem as a caregiver overtime than male caregivers. • Both female and male caregivers reported similar levels of disruption in their daily schedule and financial problems due to caregiving, and lack of family support.	
66	Nijboer et al.	2001	64% (148) Caregivers only; Longitudinal; Quantitative	Mean age (SD): 63 (11) Race/Ethnicity: Not reported - Dutch sample Relationship to patient: 100% Spouse	Not reported	Mean age: Not reported Race/Ethnicity: Not reported - Dutch sample Diagnosis: 100% Colorectal Stage: Not reported	• Physical functioning declined in female (but not male) caregivers across 6 months. • Improvement in mental and social functioning from the time of patients' diagnosis to 6 months post-diagnosis was comparable between male and female caregivers. • Female caregivers reported worse mental	Transactional Stress theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							functioning than male caregivers. • Low income female caregivers reported poorer mental functioning than low income male caregivers. • Mental functioning improved in low-income male caregivers (but not female) at 6-months post-diagnosis. • For male (but not female) caregivers, caregiver self-esteem related to better mental functioning.	
67	Song et al.	2014	58.5% (501) Caregivers only; Cross-sectional; Quantitative	<u>Mean age (SD):</u> 53.2 (12.5) <u>Race/Ethnicity</u>: Not reported-Korean sample <u>Relationship to patient:</u> 46.5% Spouse 53.5% Other	47.2% (492)	<u>Mean age (SD):</u> 64.3 (13.7) <u>Race/Ethnicity:</u> Not reported-Korean sample <u>Diagnosis</u>: 18.9 % Lung, 17.9% Gastric, 69.1% Other <u>Stage:</u> Not reported	• Female bereaved caregivers had lower quality of life and mental health than male counterparts. • Younger age was the only other risk factor associated with bereaved caregivers' impaired quality of life. Gender by age effects were not tested. • Bereaved caregivers reported more problems	Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							related to self-care, usual activities, and anxiety and depression, compared to the general population. Gender effects were not tested.	
68	Valeberg et al.	2013	39% (159) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 56.7 (12.2) Race/Ethnicity: Not reported-Norwegian sample Relationship to patient: 89.5% Spouse, 5.6% Friend, 4.3% Offspring, 1% Sibling	68.6% (159)	Mean age (SD): 58.5 (11.1) Race/Ethnicity: Not reported-Norwegian sample Diagnosis/Stage: 46.5% Breast, 18.2% Prostate, 15.6% Colorectal, 19.7% Other Stage: 28.9% 0-II; 81.1% III-IV	• Female caregivers reported greater anxiety than male caregivers. • No gender differences in caregivers' depressive symptoms and quality of life. • Caregivers reported greater depressive symptoms when their patients had sleep disturbances. Gender effects were not tested. • Caregivers of younger patients reported poorer mental health than caregivers of older patients. Gender effects were not tested.	Transactional Stress theory
69	Segrin et al.	2012	94% (70) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 61.1 (10.9) Race/Ethnicity: 81% White, 9% Black, 4% Latina/o, 3% Asian Relationship to patient: 83% Spouse,	0% (70)	Mean age (SD): 66.7 (9.3) Race/ethnicity: 84% White, 9% Black, 7% Latino Diagnosis: 100% Prostate Stage:	• Patient's prostate-specific health issues (e.g., urinary, bowel, sexual function) related to their own and their caregiver's	Transactional Stress Theory; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
				10% Friend, 4% Sibling, 3% Son/Daughter		36% I, 19% II, 19% III, 26% IV	poorer psychological quality of life (anxiety, depression, fatigue, lack of positive affect). • Caregivers’ psychological quality of life predicted the patients’ psychological quality of life 8 and 16 weeks later. • Caregivers’ psychological quality of life more strongly predicted their patients’ changes in psychological quality of life over time than patients’ psychological quality of life predicted their caregivers’ changes in psychological quality of life over time.	
70	Kim et al.	2010	64.7% (896) Caregivers only; Cross-sectional; Quantitative	Mean age (SD): 54.4 (12.8) Race/Ethnicity: 90.5% White/Caucasian Relationship to patient: 65.5% Spouse	Not reported	Mean age (SD): Not reported Race/Ethnicity: Not reported Diagnosis: 27% Breast, 18% Ovarian, 14% Lung, 11% Non-Hodgkin’s Lymphoma, 9% Prostate, 6% Other Stage: Not reported	• No gender differences in various caregivers’ unmet needs at 2-month and 5-year after the patients’ diagnosis. • Female caregivers reported greater psychosocial unmet needs at 2-year post diagnosis.	Lifespan Perspective; Role Strain Theory, Transactional Stress Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							- No gender differences in caregivers' mental and physical health at 2-month, 2-year, and 5-year post diagnosis. - Psychosocial unmet needs of caregivers consistently related to poorer mental health across the three cohorts, caregivers' financial unmet needs related to poorer physical health at 2-month and 2-year post diagnosis, and caregivers' unmet needs for daily activities (i.e., caregivers' personal care and balancing caregiving and social roles) related to poorer mental health at 2-month and 2-year post diagnosis. - Gender differences in these relations were not tested.	
• Caregiver Outcomes at the Relational Level/Context								
71	McLean et al.	2011	39.1% (46) Both caregivers & patients; Cross-sectional; Quantitative	<u>Mean age (SD):</u> 49.3 (11.8) <u>Race/Ethnicity:</u> Not reported-Canadian sample <u>Relationship to patient:</u> 100% Spouse	60.9% (46)	<u>Mean age (SD):</u> 49.7 (11.5) <u>Race/Ethnicity:</u> Not reported-Canadian sample <u>Diagnosis:</u> 26.1% Breast,	- Caregivers reported greater marital distress than their patients, regardless of gender.	Attachment theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
						17.4% Head & Neck, 15.2 % Blood, 41.3% Other Stage: Not reported	• Patients (regardless of gender) and females (regardless of patient vs caregiver) reported greater depressive symptoms. • Patients (regardless of gender) and males (regardless of patient vs caregiver) reported greater hopelessness. • Female caregivers' marital distress increased as their male patients' avoidance increased.	
72	Kim et al.	2015a	63.1% (369) Caregivers only; Longitudinal; Quantitative	Mean age (SD): 55.0 (10.3) Race/Ethnicity: 90% White Relationship to patient: 73% Spouses, 14% Offspring, 6% Sibling	Not reported	Mean age: Not reported Race/Ethnicity: Not reported Diagnosis: 29.5% Breast, 21.7% Prostate, 12.5% Colorectal, 8.4% Non-Hodgkin's Lymphoma, 13% Other Stage: Not reported	• Female caregivers reported greater caregiving stress than male caregivers. • Male caregivers had higher external caregiving motives than female caregivers. • Autonomous caregiving motives negatively related to all three facets of spirituality three years later only among male caregivers.	Self-Determination Theory

Study			**Caregiver Characteristics**		**Patient Characteristics**		**Gender Findings**	
							- Peace component of spirituality related to concurrent better mental health, regardless of gender. - Meaning component of spirituality related to concurrent better mental health only among male caregivers. - Faith component of spirituality related to concurrent poorer physical health only among male caregivers.	
73	Segrin et al.	2005	20% (48) Both caregivers & patients; Longitudinal; Quantitative	Mean age (SD): 50.6 (14.5) Race/Ethnicity: 86% White, 14% Hispanic Relationship to patient: 67% Husband, 17% Daughter, 8% Friend, 8% Other	100% (48)	Mean age (SD): 54.4 (10.0) Race/ethnicity: 80% White, 20% Hispanic Diagnosis: 100% Breast Stage: 100% I-III	- For both female patients and male caregivers, one's own stress and negative affect related to their own greater depression, while their own positive affect related to their own lower levels of depression. - Female patients' stress related to their male caregivers' depression, while male caregivers' stress did not	Role Identity theory; Transactional Stress Theory; Emotional Closeness Perspective; Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							relate to female patients' depression. • Female patients' negative affect related to their partners' depression, while male caregivers' negative affect did not relate to female patients' depression. • Male caregivers' positive affect related to female patients' depression, while female patients' positive affect did not relate to male caregivers' depression.	
74	Zwahlen et al.	2010	54% (224) Both caregivers & patients; Cross-sectional; Quantitative	Mean age: 59.5 Race/Ethnicity: Not reported-Swiss sample Relationship to patient: 83.8% Spouse, 11% Offsping, 5.2% Other	42% (224)	Mean age: 60 Race/Ethnicity: Not reported-Swiss sample Diagnosis: 22.3% Lymphoma, 17.0% skin, 14.3% Intestinal, 62.8% Other Stage: Not reported	• Females (regardless of patient vs caregiver) reported greater posttraumatic growth than male counterparts. • Patients (regardless of gender) reported greater posttraumatic growth than caregivers. • More similar levels of posttraumatic growth between patients and caregivers were	Interdependence Theory; Gender Role Perspective; Role Enhancement Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							reported in male patient-female caregiver dyads than female patient-male caregiver dyads.	
75	Kim et al.	2015b	77.5% (398) Both caregivers & patients; Cross-sectional (caregivers)/ Longitudinal (patients); Quantitative	Mean age: Not reported Race/Ethnicity: 76.9% Caucasian, 14.8% African American, 3.0% Hispanic, 5.3% Other Relationship to patient: 63.8% Spouse, 14.9% Offspring, 5.3% Sibling, 6.9% Other	35.4% (398)	Mean age: Not reported Race/Ethnicity: 78.6% Caucasian, 15.1% African American, 2.8% Hispanic, 3.5% Other Diagnosis: 53.3% Colorectal, 46.6% Lung Stage: 1% 0, 31.7% I, 19.3% II, 34.4% III, 13.6% IV	• Male caregivers of female patients reported the lowest levels of depressive symptoms. • Female patients' mental health scores were similar to their caregivers' mental health, regardless of the caregivers' gender. • Male patients with male caregivers reported lower mental health than male patients with female caregivers. • Female patients' depression symptoms related to their caregivers' poorer physical health, regardless of caregivers' gender. • Greater differences in depressive symptoms with the dyad related to female patients' poorer physical health	Interdependence Theory; Gender Role Perspective

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							and to caregivers' (regardless of gender) better physical but poorer mental health. • Male patients' elevated depressive symptoms related to caregivers' poorer mental health (regardless of the caregivers' gender).	
76	Moser et al.	2013	61% (154) Both caregivers & patients; Longitudinal; Quantitative	<u>Mean age (SD):</u> 56.8 (13.3) <u>Race/Ethnicity:</u> Not reported-Swiss Sample <u>Relationship to patient:</u> 100% Partner	39% (154)	<u>Mean age (SD):</u> 57.5 (9.2) <u>Race/Ethnicity:</u> Not reported-Swiss Sample <u>Diagnosis:</u> 27.7% Hematologic, 27.5% Lung, 24.5% Bowel, 23.4% Breast, 24.4% Other <u>Stage:</u> 15.1% I, 18.9% II, 27.6% III, 38.6% IV	• Female caregivers reported greater anxiety and depression than male caregivers and their patients (regardless of gender) up to 3-years post-diagnosis. • Females (regardless of patient vs caregiver) reported greater anxiety, depression, and psychological distress, and lower quality of life. • Male patients' distress related to their female caregivers' distress 6 months later. • Changes in anxiety, depression,	Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							psychological distress, and quality of life across 3 years did not vary by gender along with patients vs caregiver role.	
77	McPherson et al.	2008	68% (66) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 61.0 (13.8) Race/Ethnicity: 88% Caucasian, 12% Other Relationship to patient: Mixed	43% (66)	Mean age (SD): 68.0 (11.6) Race/Ethnicity: 91% Caucasian, 9% Other Diagnosis: 28.8% Lung, 24.2% GI, 47.4% Other Stage: 100% III-IV	• Caregivers overestimated their patients' psychological (than physical) symptoms. • Male caregivers had greater discrepancy in their rating of their patients' physical and psychological symptoms than female caregivers.	Interdependence Theory; Gender Role Perspective
78	Drabe	2013	55% (156) Both caregivers & patients; Cross-sectional; Quantitative	Mean age (SD): 57.9 (21.8) Race/Ethnicity: Not reported-Swiss sample Relationship to patient: 100% Spouse	45% (149)	Mean age (SD): 58.5 (12.8) Race/Ethnicity: Not reported-Swiss Sample Diagnosis: 22.5% Lymphoma, 17.2% Skin, 9.6% Breast, 14.8% Intestinal, 9.6% Lung, 6.2% Leukemia, 6.7% Myeloma, 6.6% Other Stage: Not reported	• Males' (regardless of patient vs caregiver) perception the cancer had negative impact on their relationship related to their lower quality of life, and greater anxiety and depression. • Female caregivers', but not female patients', perception the cancer had negative impact on their relationship related to their lower quality of life, and greater	Interdependence Theory

Study			Caregiver Characteristics		Patient Characteristics		Gender Findings	
							anxiety and depression. • The perception that the cancer had negative impact on their relationship related to their lower quality of life, and greater anxiety and depression, controlling for gender. • No gender differences in patients’ perception that the cancer had negative impact on their relationship. • Female caregivers were more likely to perceive the cancer having negative impact on their relationship than male caregivers.	