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**Gender differences in caregiving among family - caregivers of people with mental illnesses**

Sharma N *et al*. Gender differences in family-caregiving

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**Abstract**

All over the world women are the predominant providers of informal care for family members with chronic medical conditions or disabilities, including the elderly and adults with mental illnesses. It has been suggested that there are several societal and cultural demands on women to adopt the role of a family-caregiver. Stress-coping theories propose that women are more likely to be exposed to caregiving stressors, and are likely to perceive, report and cope with these stressors differently from men. Many studies, which have examined gender differences among family-caregivers of people with mental illnesses, have concluded that women spend more time in providing care and carry out personal-care tasks more often than men. These studies have also found that women experience greater mental and physical strain, greater caregiver-burden, and higher levels of psychological distress while providing care. However, almost an equal number of studies have not found any differences between men and women on these aspects. This has led to the view that though there may be certain differences between male and female caregivers, most of these are small in magnitude and of doubtful clinical significance. Accordingly, caregiver-gender is thought to explain only a minor proportion of the variance in negative caregiving outcomes. A similar inconsistency characterizes the explanations provided for gender differences in caregiving such as role expectations, differences in stress, coping and social support, and response biases in reporting distress. Apart from the equivocal and inconsistent evidence, there are other problems in the literature on gender differences in caregiving. Most of the evidence has been derived from studies on caregivers of elderly people who either suffer from dementia or other physical conditions. Similar research on other mental illnesses such as schizophrenia or mood disorders is relatively scarce. With changing demographics and social norms men are increasingly assuming roles as caregivers. However, the experience of men while providing care has not been explored adequately. The impact of gender on caregiving outcomes may be mediated by several other variables including patient-related factors, socio-demographic variables, and effects of kinship status, culture and ethnicity, but these have seldom been considered in the research on gender differences. Finally, it is apparent that methodological variations in samples, designs and assessments between studies contribute a great deal to the observed gender differences. This review highlights all these issues and concludes that there is much need for further research in this area if the true nature of gender differences in family-caregiving of mental illnesses is to be discerned.

**Key words:** Gender; Family-caregiving; Elderly; Dementia; Schizophrenia; Mood disorders

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**Core tip:** Women form the bulk of those who provide care for people with mental illnesses. Many studies have found that they are more exposed to caregiving stressors and report greater strain, burden and distress than men. However, the evidence for such gender differences in caregiving is equivocal and inconsistent leading to the view that caregiver-gender explains only a minor proportion of the variance in negative caregiving outcomes. Moreover, the evidence is not representative and often methodologically flawed. There is, thus, much scope for further research to understand the true nature of gender differences in family-caregiving of mental illnesses.

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**INTRODUCTION**

Caring for someone with a mental illness has always been a family endeavour. This is true for developed as well as developing countries. Despite their relatively greater mental health-care resources, changing demographics and health-care norms in developed countries have shifted the locus of care from institutions to communities[1,2]. Social and health-policy changes have also placed greater emphasis on home and family-care for the chronically mentally ill in these countries. In contrast, families have always been the mainstays of care for the mentally ill in developing countries[3,4].

Family-caregiving is a term used for unpaid care provided by family members or friends to chronically ill or functionally impaired persons[1,5]. The amount of assistance provided by the family-caregiver usually exceeds the level of help provided under ordinary circumstances. Not only is the majority of informal care provided by family members, but the majority of family-caregiving is also carried out by women[6,7]. All over the world, women are the predominant providers of informal care for family members with chronic medical conditions or disabilities, including the elderly and those with other mental illnesses[6-14]. Family-caregiving still remains a predominantly feminine activity despite the fact that with changing demographics and changes in social structures and norms, men are increasingly assuming roles as caregivers[15]. While providing care may have its rewards for family-caregivers, it often entails bearing emotional, physical, social and financial burden, which makes the experience stressful. Despite the voluminous amount of literature on family-caregiving, there is much that remains to be understood about why people take on strenuous caregiving duties, how they approach their caregiving responsibilities, and the consequences of taking up the role of a caregiver[16,17]. For an improved grasp of the experience of caregiving, a more accurate understanding of the caregiving-context which includes gender, familial relationship and cultural background of the caregiver is required[16]. Among these contextual factors, the impact of gender on caregiving has attracted the maximum research attention. The bulk of this research has been carried out among family-caregivers of the elderly with dementia or physical conditions, while gender differences among caregivers of other mental illnesses have been relatively neglected. However, even in this body of research there is considerable disagreement about the exact nature of gender differences in caregiving, and no consistent explanations about how gender influences caregiving.

**GENDER DIFFERENCES IN FAMILY-CAREGIVING AMONG THE ELDERLY**

Research on gender differences among caregivers of the elderly with dementia and physical illnesses have brought to the fore several themes of interest.

***Women predominate among caregivers of the elderly***

Worldwide, nearly 70% to 80% of the impaired elderly are cared for at home by their family members[5-7,9,11,17-20]. Varying estimates across different countries indicate that 57% to 81% of all caregivers of the elderly are women[1,6-8,10,12-14,17-26]. In most cases female caregivers are wives or adult daughters of the elderly person. They are usually middle-aged, with a considerable proportion of them being over 65 years themselves. They are also more likely to be employed outside home than in the past[7,17,19,27]. The elderly recipients of care are either frail or chronically physically ill; the majority, however, have dementia or other forms of mental illnesses[7]. Despite the preponderance of women, increased life expectancy, more women working outside home, and smaller families have all increased the pressures on men to assume roles as caregivers of the elderly. Studies in the eighties in the United States suggested that though women predominated as caregivers, somewhere between 20% and 33% of the caregivers of the elderly were men[6,18,19,26]. More recently, it has been reported that the proportion of men providing care for the elderly has been steadily increasing, so much so that men may constitute nearly half of the primary caregivers of the elderly[8,15,16,19,23,28-35]. Despite the increasing emergence of men as caregivers, research has not taken into account this trend and continues to maintain its traditional focus on female caregivers. Although it appears that men approach caregiving differently, the experience of caregiving among men has not been examined as often as it has been among women[8,15,23,26,29-34].

***Gender differences in the experience of caregiving***

A number of studies have suggested that the experience of caregiving differs among men and women. Gender-specific differences in the provision of care for those with dementia or physical illnesses have been found to exist in several areas.

**Time spent on caregiving and the duration of caregiving:**Gender-differences in the time spent on caregiving have been considered in several reviews and studies on the subject. Some of them have concluded that despite conflicting reports, the bulk of the evidence indicates that women devote greater time to caregiving for the elderly, compared to men[1,16,20,25,27-29,34,36,37].In a comprehensive narrative-review of 30 research-reports, Yee *et al*[22] concluded that the majority of studies which had examined gender differences in the time spent on caregiving had found that women spend more time on caregiving than men. Explanations based on the gendered nature of paid work have argued that women are more likely to care for the elderly because they are less likely to be employed outside home[38]. Women's work roles are viewed as being centred in the home and may reflect a greater sense of family obligation among them[11,16,17,23,38,39]. This increases the likelihood of women spending more time providing care. Time-intensive care among women is also more likely in those societies and cultures, which endorse the traditional value of the woman as the natural caregiver[8,11,23]. However, research findings about gender differences in the time spent on caregiving have not always been consistent. A number of reviews and studies have not found gender to be a significant predictor of the time spent on caregiving[8,10,18,26,38,40-42]. In particular, two meta-analytic reviews on the subject, one of which included 229 studies, have concluded that though women spent more time on caregiving, differences between men and women in this regard were small and of doubtful practical significance[24,43]. There is also considerable agreement that gender differences in the time spent on caregiving are confounded by several other variables such as kinship (spouses versus children), and cultural or ethnic influences[10,22,24,26,38,42,43]. Regarding the duration of caregiving, there is far greater consensus that gender does not have an impact on total duration of caregiving[8,10,24,43].

**Types of tasks:** The literature on gender differences in the type of caregiving tasks has also yielded conflicting findings. A distinction has been made in this literature between tasks associated with personal care such as bathing, dressing and managing incontinence, and tasks associated with management of everyday living. Some studies have found that women are more likely than men to provide assistance with tasks related to personal care[18,44], while others have not reported similar gender differences[9,10,38]. Reviews on the subject have also concluded that gender differences in the types of tasks have only been reported in some but not all studies, and only for tasks related to personal-care. Female caregivers are more likely than men to carry out these tasks[16,17,22,27-29]. Gender differences have not been found in tasks associated with everyday living[38]. These conclusions were endorsed by two meta-analytic reviews[24,43], but these further concluded that gender differences in personal-care tasks were small in magnitude. Gender differences in the types of tasks also appear to be influenced by several mediating variables such as the patient’s gender and disability levels, kinship, caregivers’ marital and employment status, family composition, social class, and race or ethnicity[10,22,27,38,45]. (1) Role-strain and role-conflict:Caregiver role-conflicts refer to the perceived difficulties in fulfilling the caregiver-role, and the negative consequences emanating from this role[36]. Female caregivers often have to play multiple roles such as wives, daughters, mothers, or employees[16,17,38]. The pressures of enacting these conflicting roles may create difficulties for women. Role-conflicts and role-strains may manifest in many ways[16,17,38,46]. Role-conflicts arise when conflicting and incompatible demands are made of the caregiver himself/herself[16,17]. Role-strain occurs when one is unable to meet the expectations and obligations of multiple roles. Role-overload sets in when these competing demands overwhelm the person’s ability to carry out his/her role[16,17]. This might lead to role-captivity, which refers to the caregivers’ feelings of being trapped in their roles[17,46]. Role-conflicts give rise to several adverse consequences for caregivers such as physical problems, fatigue, burnout, depression and other emotional disturbances, and feelings of resentment towards the patient[17,46]. Many studies have found that female caregivers of the elderly with physical problems or dementia experience greater role-strain and role-conflict than male caregivers[1,13,14,16,20,27-29,36,39,44,47-52]. Women appear to experience greater interference and limitations in their work and social life because of their role as caregivers. They are generally believed to experience greater role-strain due to the more intense care they provide. Greater role-strain in women produces more frequent health problems, a less positive outlook on life, and a greater need for external support. From their review of nine studies on gender differences in caregiving role-strain, Yee *et al*[22] concluded thatfemale caregivers report that their caregiving-roles interfered with their work and social life to a greater extent than men.However, such findings have not always been consistent, with several studies findingthat caregivers’ gender has no impact on their evaluations of role-strain[20,32,42,53]. It has been suggested that differences between studies arise more from the fact that perceptions of role-strain may vary depending on whether the caregivers are spouses or children of the elderly[36,44 47,50,54]. (2)Satisfaction with caregiving: There is a relatively small amount of research-data on gender differences in other aspects of caregiving such as satisfaction with caregiving. The findings are equivocal, with some studies reporting that women are less satisfied[55-58], while a similar number of studies have found no differences in satisfaction between male and female caregivers[10,33,59,60]. (3)Reasons for providing care: Several authors have identified emotional and social connectedness of women towards their patients, as well as their sense of family obligation as the basis for their nurturing approach to caregiving[16,61,62]. Women appear to be more concerned about the emotional well-being of the people they provide care for. This attachment often motivates them to engage in caregiving[20,38,61-63]. A greater sense of responsibility towards the patient, altruism, and self-sacrifice has also been found to characterize women’s attitudes to providing care[10,25,27,33,38,45,61-63]. However, studies of male caregivers have suggested that caregiving among men is also driven by a similar sense of affection, commitment, and family responsibility[27,30].

***Gender differences in caregiver-burden***

Caregiver-burden has been defined as ‘‘a multidimensional response to physical, psychological, emotional, social, and financial stressors associated with the caregiving experience’’[5,64,65]. Caregiver-burden is often the final outcome of a stressful and negatively perceived experience of providing care[66]. Not surprisingly, the greater part of the literature on gender differences in caregiving has been devoted to the subject of caregiver-burden. However, the results have been far from conclusive. Though a number of studies have found that female caregivers report greater levels of both objective and subjective burden[8,10,11,17,23,33,34,39,44,46-48,51,65,67-73], a similar number have been unable to find any gender differences in caregiver-burden[9,12,30-32,36,50,53,54,74-83]. Moreover, some studies have found differences in only certain aspects of burden, e.g. subjective burden, and not in others[8,10,17]. Narrative reviews on the subject have been similarly uncertain in their conclusions. While some of them have concluded that caregiver-burden is higher among female caregivers[5,22,25,27,29,84-86], others have not found evidence in favour of greater levels of burden among women[12,15,30]. In their seminal narrative-review on gender differences in caregiving, Yee *et al*[22] extracted data on caregiver-burden from 17 of the 30 studies they had included in their review. The vast majority of these studies reported that women experienced higher levels of caregiver-burden than men. However, meta-analytic studies have come to somewhat different conclusions. An early meta-analysis included 14 studies on caregiver stressors and burden among the frail elderly[43]. It found that though female caregivers were more likely to more likely to report greater caregiver-burden, differences between the genders were small. In another meta-analysis of 4 studies, female caregivers of patients with dementia reported poorer global self-health, but did not differ from male caregivers on other risk factors[52]. In a meta-analysis of 84 studies of caregivers of the frail elderly,Pinquart and Sorensen[87] found that higher stress and poorer well-being among caregivers were more common among older women who were spouses of the patients. However, a later meta-analysis of 176 studies of caregivers of the elderly by the same authors found that associations of caregiving stressors with health were stronger among older men proving care for those with dementia[88]. The same authors have also carried out the most comprehensive meta-analysis till date of 229 studies on gender differences in caregiving of the elderly[24]. In this meta-analysis, the authors found that female caregivers had higher levels of burden and lower levels of subjective well-being and physical health compared with men, but these differences were small and barely reached the threshold of practical significance. Thus, they concluded that the available evidence indicated that there are more similarities than differences between male and female caregivers in this regard, and that some of the apparent gender differences could have arisen from methodological variations, or the effect of other confounding factors on caregiver-burden[24].

***Gender differences in psychological morbidity***

In their review, Yee and Schulz[22] found nine studies which had examined gender differences in depression among caregivers of the frail elderly, and three studies which had reported gender differences in general psychiatric symptomatology. Overall, in 10 out of these 12 studies higher levels of depression and psychological morbidity was reported among female caregivers. Other reviewers have also reported greater psychological morbidity, principally depression, among female caregivers of the elderly[20,27,34,85,89,90]. Additionally, gender differences in psychological morbidity have been found in other studies[35,48,67,69,71-73,91]. In contrast, several studies have not been able to find significant differences among male and female caregivers in depression or psychiatric symptom-scores[23,33,75-78,82,92]. Meta-analytic reviews, though finding a higher prevalence of depression among female caregivers of the elderly, have reported that these gender differences were of much smaller magnitude than expected[10,24,43,52].

**GENDER DIFFERENCES IN FAMILY-CAREGIVING AMONG SCHIZOPHRENIA AND MOOD DISORDERS**

The issue of gender differences in family-caregiving in schizophrenia and mood disorders, or other psychiatric conditions has not been examined as comprehensively as among the elderly. Studies, which have evaluated burden among caregivers of such illnesses, have only occasionally considered gender of the caregiver when examining the numerous correlates of caregiver-burden. Nevertheless, certain trends similar to the literature on gender differences in the elderly are still evident.

***Gender and type of caregivers of patients with schizophrenia and mood disorders***

In a recent review of 42 studies on caregiver-burden in schizophrenia, the majority of caregivers were mainly the parents (usually mothers), followed by spouses and siblings of patients[93]. In an earlier review, Awad and Voruganti[94] had reported that women, either wives or sisters formed the greater part of caregivers of those with schizophrenia. They quoted a US community survey, in which women constituted 82% of caregivers, with 90% being mothers of patients; 70% of them were over 60 years of age. This trend has been endorsed by a number of other reviews, which show that most family-caregivers of those with schizophrenia are their parents, mostly mothers of patients, and they are usually elderly[95-101]. However, the number of male caregivers seems to be on the increase[94,98,102], while in certain cultures men often predominate as caregivers[93,98,103,104].

***Gender differences in caregiver-burden and psychological distress***

Not only is there limited research on gender differences in caregiver-burden among schizophrenia and mood disorders, but the evidence for such differences is also less obvious. In their review of caregiver-burden in schizophrenia, Caqueo-Urízar *et al*[93] noted that female gender, unemployment and time spent in caregiving were all associated with higher burden. In contrast, in an earlier review of patients with severe mental illnesses other than dementia, Baronet[101] had identified 10 studies, which had evaluated the relationship between burden and caregivers’ gender.None of them had found gender differences in overall burden, objective burden, subjective burden, worry, fear, or stigma. The results of individual studies conducted among family-caregivers of those with schizophrenia have also varied considerably. A number of these studies have reported higher levels of caregiver-burden, stress, burnout, psychological morbidity and poorer quality of life among female caregivers of those with schizophrenia[97,100,102-114]. However, several other studies have not found any differences in caregiver-burden between the genders[98,115-124]. Then again, very few of these studies on schizophrenia have actually conducted comprehensive examinations of gender differences among caregivers. In an Indian study, caregiver-burden was examined in 70 spousal caregivers of patients with schizophrenia. Results showed that female spouses experienced significantly greater total burden and burden in the areas of external support, caregivers’ routine, patients’ support, patients’ behaviour, and caregivers’ coping strategies[106]. Female spouses also felt more anxious, tired, frustrated or isolated, and had to face a greater work load. Another study examined differences in caregiving between mothers and fathers who had a son or daughter with schizophrenia, in 100 such caregiver-couples[115]. The results showed that men and women were equally vulnerable to caregiving stressors. Studies among caregivers of patients with bipolar disorder are fewer. Perlick *et al*[125] examined gender differences among 150 primary caregivers of patients enrolled in the Systematic Treatment Enhancement Program for Bipolar Disorder. They found that men and women did not differ on depression or caregiver-strain. Some of the other studies of bipolar disorder have found higher levels of caregiver-burden or poorer quality of life among female caregivers[111,126,127], while others have not[128]. In a study of depressed patients with both unipolar and bipolar depression, wives were found to be more isolated and upset compared to their husbands[129]. However, results of other studies on depressive disorders have been mixed, with some reporting higher caregiver-burden or greater levels of depression among female caregivers[97,130,131], while others have not found significant gender differences in either burden or psychological morbidity[128,132]. In a recent study, a comprehensive examination of burden, psychological morbidity and other caregiving-indices was undertaken among male and female caregivers of 100 Indian patients with schizophrenia and recurrent mood disorders[133]. The majority of female caregivers were housewives. Male caregivers were more likely to be in paid employment than the female caregivers, had significantly higher income and were more likely to belong to the upper socio-economic strata than female caregivers. A significant gender difference emerged in the time spent on caregiving, with female caregivers spending more time providing care for their patients. Female caregivers also scored significantly higher in one domain of negative appraisal, while male caregivers had significantly higher scores on family-cohesion. Men cited family tradition, familial obligation, and concern about the patient’s ill health as their reasons for providing care more often than women. Women, on the other hand, were more likely than men to report dependence, especially socio-economic dependence on their male patients, feelings of affection and sympathy for them, and a greater concern about the patient’s future as their reasons for providing care[97,100,102-114]. However, there were no significant differences between male and female caregivers in any of the areas of objective or subjective burden, or psychological morbidity. Moreover, there were no differences in coping strategies, availability of social support, or personality traits such as neuroticism and rumination between men and women. The correlates of caregiver-burden and distress were largely similar among male and female caregivers. Finally, multivariate analyses showed that caregiver-gender explained only a minor proportion of the variance in caregiver-burden and distress. The results of this study thus endorsed what appears to be the consensus view in literature, largely derived from research among the elderly, that gender differences in caregiving though present are minor in nature, and caregiver-gender explains only a very small proportion of the variance in caregiver-burden and distress.

**GENDER DIFFERENCES IN FAMILY-CAREGIVING: PROBABLE EXPLANATIONS**

Several theories have been advanced to explain gender differences among caregivers of the elderly. Sociological explanations have emphasized expectations of traditional gender roles, in which women are expected to adopt the role of a caregiver. This is ingrained in females through their social and cultural experiences starting from childhood, and leads to a different approach to caregiving compared to men. Additionally, theories of segregation of labour indicate that since women are more likely to stay at home it is natural for them to take up the caregiver role[11,16,17,24,36, 38,39,45]. Men are not traditionally expected to become caregivers, which leads to a dissimilar approach towards caregiving among them. Due to their role-socialization, men may also be less adept at expressing their difficulties or emotions. This could result in a response-bias, in which men may be less likely to report difficulties in providing care than women[8-11,23,27,72]. However, it has been noted that empirical support for these theories is lacking[10,17,24,43,52]. Therefore, a second set of explanations based on the ‘stress-coping’ theory has been proposed. It has been argued that gender differences arise because female caregivers have greater exposure to caregiving stressors, and differ in their appraisal, coping and availability of social support while managing these demands[10,11,17,22,24,65]. Though this theory has found more support from different studies, but unequivocal evidence of gender differences in appraisal, coping and social support is also lacking[8-11,39,22-24,27,48,68,72,73,134].Some studies have indicated that gender differences in caregiver-burden and distress could be due to a differentiated appraisal of the caregiving situation among men and women[10,73],but the evidence for such gender differences is limited. Gender differences in coping strategies have been examined more extensively. Among family-caregivers of the elderly, a number of studies have found that women use emotion-focused coping and other ineffective coping styles such as fantasy, wishful thinking denial, escape, or avoidance, more frequently than men. In contrast, men have a wider coping repertoire than women, and use more effective coping strategies such as problem-solving, acceptance, detachment or distancing more frequently[11,25,48,72,77,134]. These differences in coping strategies could potentially explain the higher levels of caregiver-burden and psychological morbidity among women[8,11,22,23,48]. Similar gender differences in coping have occasionally been reported among caregivers of patients with schizophrenia and mood disorders[106,135,136]. However, the number of such studies is limited, both among the elderly, as well as in schizophrenia and mood disorders. Contrary findings of lack of differences in coping between male and female caregivers have also been reported[22,73]. Some authors have proposed that female caregivers experience higher burden and distress because of lack of available social support[8,16,22,67]. According to them, women who care for the elderly are less likely to seek or receive support, because of the restrictions imposed on them by their caregiving roles. Men, on the other hand, are more inclined to seek and receive outside help for caregiving from formal and informal sources. Women seem to have larger social networks and more available sources of informal support, while men who have less access to formal and informal support, may be more motivated to seek help from these sources[22,24,137]. A greater lack of social support among women has also been found in spouses of patients with schizophrenia or mood disorders[106,129]. Again, the available results evidence are inconsistent in this regard, and gender differences in social support are not as pronounced as expected[10,22,24], either among elderly persons or those with other psychiatric illnesses.Neuroticism, the greater propensity to break down under stress has been shown to have a significant influence on burden and psychological morbidity among caregivers. Some of the evidence indicates that the higher levels of depression and psychiatric symptoms among female caregivers could be partly accounted for by their higher neuroticism and greater use of escape–avoidance coping, but the number of such studies is small[22,46,72].

Since gender differences in appraisal, coping, social support and personality traits have been minimal and inconsistent, other explanations have been sought to account for differences in family-caregiving between men and women. It has been argued that the impact of gender is mediated by several other variables. These include characteristics of the patients, the severity of their illnesses including behavioural problems and associated disabilities, composition of the family, caregivers’ demographics such as age, marital status, education, employment and socioeconomic status, their relationship with the patient, and the effects of culture, and ethnicity[5,8-11,22-28,34,38,39,44,46,50,67,68,73,79,86]. The influence of culture and ethnicity and kinship with the patient and has been explored in a number of studies. It is an undisputed fact that culture and ethnicity have a seminal influence on caregiving[138]. However, whether cultural and ethnic factors impact gender differences in caregiving is a matter of some dispute. Certain authors have stated that studies from various cultures generally find that female caregivers are at greatest risk for caregiver-burden[5,93]. Others have proposed that gender differences in caregiving are less likely in cultural and ethnic groups with more positive attitudes towards the elderly, a traditional emphasis on women as caregivers, and the relative unavailability of formal sources of care[8-11,13,14,38,45,50,73,79,139]. It has also been suggested that among certain cultural or ethnic groups, familial-cultural variables such as familism, family-support, filial responsibility and family-cohesion may contribute to the gender differences in caregiving[5,8,10,11,73]. Familism refers to the precedence given to the family needs over the needs of the individual, while family-cohesion refers to the emotional bonding that family members have towards one another, and filial responsibility or piety refers to the tradition of caring for one’s elders[5,140]. However, the exact direction of gender differences due to familial-cultural variables is unclear, because both higher burden among female caregivers[5,8,10,11,73], or similar levels of burden between the two genders[12,79,133,141] has been reported among cultural or ethnic groups with these familial-cultural values. Kinship status of the primary caregiveris another factor, which is thought to have a significant bearing on gender differences in caregiving[5,20,22,24,26,27,34,39,45,46,54,65,86]. Many studies have found greater burden or strain among spouses (usually wives) than children[9,11,23,38,79]; others have found the obverse[39,47,67], while some have found no effect of kinship ties on gender differences among caregivers[50,74].

**GENDER DIFFERENCES IN CAREGIVING: METHODOLOGICAL VARIATIONS**

Methodological variables contribute a great deal to the observed gender differences[15,24,29,86,101]. It has been repeatedly pointed out thatthere is a great deal of difference across studies in their samples, designs, assessment-procedures, data analyses and theoretical frameworks. These methodological variations could account for a large proportion of the variance in findings, and may give rise apparent rather actual differences between male and female caregivers[1,15 22-24,27 29,36,43,52,85,86,89,101].

**GENDER DIFFERENCES IN CAREGIVING: CONCLUSIONS AND FUTURE DIRECTIONS**

Across the world women still constitute the majority of caregivers either of the elderly, or of those with other psychiatric disorders. However, the proportion of men taking up the caregiver’s role is steadily increasing. Although a large body of the evidence seems to indicate that women suffer more from the negative consequences of providing care, several other trends apparent in research need to be noted. Despite extensive examination of the area, gender differences in caregiving have not been consistently or conclusively documented. The magnitude and significance of the gender differences, which have been found is also uncertain. The majority of studies have been carried out among women; the experience of male caregivers has been relatively neglected. The bulk of the evidence comes from studies conducted among the elderly; gender differences in conditions such as schizophrenia or mood disorders have not been examined as comprehensively. Many explanations have been provided for greater burden and distress among female caregivers, but most of them are not supported by data. The effect of several variables, which mediate the influence of gender on outcomes of caregiving is undecided. Finally, methodological variations between studies may conceal the true nature and extent of gender differences. Future research will need to address all these deficiencies before a better understanding of the subject can be obtained. If significant gender differences are indeed found, these will have major implications for development of gender-specific caregiver interventions, and social policy recommendations to improve the plight of female caregivers. It is for this very reason that there is much scope for further research in this area.

**REFERENCES**

1 **Morris M**. Gender-sensitive home and community care and caregiving research: a synthesis paper. Centres of Excellence for Women's Health. 2001. Available from: URL: http://www.womenandhealthcarereform.ca/publications/synthesis.pdf

2 **Cochrane JJ**, Goering PN, Rogers JM. The mental health of informal caregivers in Ontario: an epidemiological survey. *Am J Public Health* 1997; **87**: 2002-2007 [PMID: 9431291 DOI: 10.2105/AJPH.87.12.2002]

3 **Leggatt M**. Families and mental health workers: the need for partnership. *World Psychiatry* 2002; **1**: 52-54 [PMID: 16946824]

4 **Shankar R**, Rao K. From burden to empowerment: the journey of family caregivers in India. In: Sartorius N, Leff J, Lo´pez-Ibor JJ, Okasha A. Families and mental disorders. Chichester, England: John Wiley & Sons, Ltd, 2005: 259–290

5 **Etters L**, Goodall D, Harrison BE. Caregiver burden among dementia patient caregivers: a review of the literature. *J Am Acad Nurse Pract* 2008; **20**: 423-428 [PMID: 18786017 DOI: 10.1111/j.1745-7599.2008.00342.x]

6 National Alliance for Caregiving and AARP. Caregiving in the US. 2004. Available from: URL: http://www.caregiving.org/data/04finalreport.pdf

7 National Alliance for Caregiving and AARP. Caregiving in the US. 2009. Available from: URL: http://www.caregiving.org/data/FINALRegular ExSum50plus.pdf

8 **Akpınar B**, Küçükgüçlü O, Yener G. Effects of gender on burden among caregivers of Alzheimer's patients. *J Nurs Scholarsh* 2011; **43**: 248-254 [PMID: 21884370 DOI: 10.1111/j.1547-5069.2011.01402.x.]

9 **Serrano-Aguilar PG**, Lopez-Bastida J, Yanes-Lopez V. Impact on health-related quality of life and perceived burden of informal caregivers of individuals with Alzheimer's disease. *Neuroepidemiology* 2006; **27**: 136-142 [PMID: 16974108 DOI: 10.1159/000095760]

10 **del-Pino-Casado R**, Frías-Osuna A, Palomino-Moral PA, Ramón Martínez-Riera J. Gender differences regarding informal caregivers of older people. *J Nurs Scholarsh* 2012; **44**: 349-357 [PMID: 23121734 DOI: 10.1111/j.1547-5069.2012.01477.x]

11 **Papastavrou E**, Tsangari H, Kalokerinou A, Papacostas SS, Sourtzi P. Gender issues in caring for demented relatives. *Heal Sci Jl* 2009; **3**: 41-53

12 **Tang B**, Harary E, Kurzman R, Mould-Quevedo JF, Pan S, Yang J, Qiao J. Clinical characterization and caregiver burden of dementia in China. *Value in Health Regional Issues* 2013; **2**: 118-126 [DOI: 10.1016/j.vhri.2013.02.010]

13 **Prince M**. Care arrangements for people with dementia in developing countries. *Int J Geriatr Psychiatry* 2004; **19**: 170-177 [PMID: 14758582 DOI: 10.1002/gps.1046]

14 **Prince MJ**. The 10/66 dementia research group - 10 years on. *Indian J Psychiatry* 2009; **51 Suppl 1**: S8-S15 [PMID: 21416024]

15 **Baker KL**, Robertson N. Coping with caring for someone with dementia: reviewing the literature about men. *Aging Ment Health* 2008; **12**: 413-422 [PMID: 18791888 DOI: 0.1080/13607860802224250]

16 **Corcoran MA**. Gender differences in dementia management plans of spousal caregivers: implications for occupational therapy. *Am J Occup Ther* 1992; **46**: 1006-1012 [PMID: 1463072 DOI: 10.5014/ajot.46.11.1006]

17 **Bush EC**. Gender differences in specific caregiver burdens. Master’s thesis. The University of Utah. 1997. Available from: URL: http://content.lib.utah.edu/utils/getfile/collection/etd1/id/960/.../700.pdf

18 National Alliance for Caregiving and AARP. Family caregiving in the US: Findings from a national survey. 1997. Available from: URL: http://www.caregiving.org/data/Caregiving\_in\_the\_US\_2009\_full\_report.pdf

19 **Stone R**, Cafferata GL, Sangl J. Caregivers of the frail elderly: a national profile. *Gerontologist* 1987; **27**: 616-626 [PMID: 2960595 DOI: 10.1093/geront/27.5.616]

20 **Montgomery RJV**, Kamo Y. Parent care by sons and daughters. In: Mancini JA, editor. Aging parents and adult children. Lexington, MA: Lexington Books, 1989: 213-227

21 **Ory MG**, Hoffman RR, Yee JL, Tennstedt S, Schulz R. Prevalence and impact of caregiving: a detailed comparison between dementia and nondementia caregivers. *Gerontologist* 1999; **39**: 177-185 [PMID: 10224714 DOI: 10.1093/geront/39.2.177]

22 **Yee JL**, Schulz R. Gender differences in psychiatric morbidity among family caregivers: a review and analysis. *Gerontologist* 2000; **40**: 147-164 [PMID: 10820918 DOI: 10.1093/geront/40.2.147]

23 **Gallicchio L**, Siddiqi N, Langenberg P, Baumgarten M. Gender differences in burden and depression among informal caregivers of demented elders in the community. *Int J Geriatr Psychiatry* 2002; **17**: 154-163 [PMID: 11813279 DOI: 10.1002/gps.538]

24 **Pinquart M**, Sörensen S. Gender differences in caregiver stressors, social resources, and health: an updated meta-analysis. *J Gerontol B Psychol Sci Soc Sci* 2006; **61**: P33-P45 [PMID: 16399940 DOI: 10.1093/geronb/61.1.P33]

25 **Scerri C**. The curvy side of dementia: the impact of gender on prevalence and caregiving. *J Malta Col Pha Prac* 2014; **20**: 37-39

26 **Mathiowetz NA**, Oliker S. The gender gap in caregiving to adults. Manuscript prepared for presentation at the American Time Use Survey Early Results Conference. University of Wisconsin-Milwaukee. 2005-09. Available from: URL: <http://www.atususers.umd.edu/wip2/papers/Oliker.pdf>

27 **Dupuis SL**, Epp T, Smale B. Caregivers of persons with dementia: roles, experiences, supports and coping: a literature review. In: Murray Alzheimer Research and Education Program, University of Waterloo, MAREP. 2004. Available from: URL: http://uwaterloo.ca/...research...research.../InTheirOwnVoices-Literature

28 **Bookman A**, Kimbrel D. Families and elder care in the twenty-first century. *Fut Chil* 2011; **21**: 117-140

29 **Houde SC**. Methodological issues in male caregiver research: an integrative review of the literature. *J Adv Nurs* 2002; **40**: 626-640 [PMID: 12473041 DOI: 10.1046/j.1365-2648.2002.02423.x]

30 **Russell R**. In sickness and in health: a qualitative study of elderly men who care for wives with dementia. *J Ag Stud* 2001; **15**: 351-367 [DOI: 10.1016/S0890-4065(01)00028-7]

31 **Lovelace LMK**. The effect of coping strategies on burden among male Alzheimer’s caregivers. MSW thesis. Louisiana State University. 2012. Available from: URL: http://etd.lsu.edu/docs/available/etd-04262012-170458/.../Lovelace\_Thesis.pdf

32 **Baker KL**, Robertson N, Connelly D. Men caring for wives or partners with dementia: masculinity, strain and gain. *Aging Ment Health* 2010; **14**: 319-327 [PMID: 20425651 DOI: 10.1080/13607860903228788]

33 **Pyosti MM**, Laakkonen ML, Strandberg T, Savikko N, Tilvis RS, Sulkava UE, Pitkala KH. Gender differences in dementia spousal caregiving. *Int J Alzheimers Dis* 2012; **2012**: 1-5 [DOI: 10.1155/2012/162960.]

34 **Chappell NL**, Dujela C, Smith A. Caregiver Well-Being: Intersections of Relationship and Gender. *Res Aging* 2015; **37**: 623-645 [PMID: 25651586 DOI: 10.1177/0164027514549258]

35 **Sugiura K**, Ito M, Kutsumi M, Mikami H. Gender differences in spousal caregiving in Japan. *J Gerontol B Psychol Sci Soc Sci* 2009; **64**: 147-156 [PMID: 19176486 DOI: 10.1093/geronb/gbn005]

36 **Donius M**. Gender differences in caregiving role strain among spouse caregivers to frail older persons. Master’s Thesis. Oregon Health and Science University. Student Scholar Archive. 1985. Available from: URL: [http://www.](http://www.bgsu.edu/organizations/cfdr)digitalcommons.ohsu.edu/etd

37 **Calasanti T**, Bowen E. Spousal caregiving and crossing gender boundaries: maintaining gendered identities. *J Ag Stu* 2006; **20**: 253–263 [DOI: 10.1016/j.jaging.2005.08.001]

38 **Almada AZ**. Gender and caregiving: a study among Hispanic and non-Hispanic white frail elders. Master’s Thesis. Virginia Polytechnic Institute and State University. 2001. Available from: URL: [http://www.](http://www.bgsu.edu/organizations/cfdr) scholar.lib.vt.edu

39 **Lin FL**, Fee HR, Wu HS. Negative and positive caregiving experiences: a closer look at the intersection of gender and relationships. The Center for Family and Demographic Research. 2011-07. Available from: URL: <http://www.bgsu.edu/organizations/cfdr>

40 **Chang CF**, White-Means SI. The men who care: an analysis of male primary caregivers who care for frail elderly at home. *J Appl Gerontol* 1991; **10**: 343-358 [DOI: 10.1177/073346489101000308]

41 **Dwyer JW**, Seccombe K. Elder care as family labor. The influence of gender and family position. *J Fam Issues* 1991; **12**: 229-247 [DOI: 10.1177/019251391012002006]

42 **Miller B**. Gender differences in spouse caregiver strain: socialization and role explanations. *J Mar Fam* 1990; **52**: 311-321 [DOI: 10.2307/353028]

43 **Miller B**, Cafasso L. Gender differences in caregiving: fact or artifact? *Gerontologist* 1992; **32**: 498-507 [PMID: 1427253 DOI: 10.1093/geront/32.4.498]

44 **Kramer BJ**, Kipnis S. Eldercare and work-role conflict: toward an understanding of gender differences in caregiver burden. *Gerontologist* 1995; **35**: 340-348 [PMID: 7622087 DOI: 10.1093/geront/35.3.340]

45 **Martin CD**. More than the work: race and gender differences in caregiving burden. *J Fam Issues* 2000; **21**: 986-1005 [DOI: 10.1177/019251300021008003]

46 **Campbell P**, Wright J, Oyebode J, Job D, Crome P, Bentham P, Jones L, Lendon C. Determinants of burden in those who care for someone with dementia. *Int J Geriatr Psychiatry* 2008; **23**: 1078-1085 [PMID: 18613247 DOI: 10.1002/gps.2071]

47 **Young RF**, Kahana E. Specifying caregiver outcomes: gender and relationship aspects of caregiving strain. *Gerontologist* 1989; **29**: 660-666 [PMID: 2689296 DOI: 10.1093/geront/29.5.660]

48 **Parks SH**, Pilisuk M. Caregiver burden: gender and the psychological costs of caregiving. *Am J Orthopsychiatry* 1991; **61**: 501-509 [PMID: 1746626 DOI: 10.1037/h0079290]

49 **Almberg B**, Jansson W, Grafström M, Winblad B. Differences between and within genders in caregiving strain: a comparison between caregivers of demented and non-caregivers of non-demented elderly people. *J Adv Nurs* 1998; **28**: 849-858 [PMID: 9829674 DOI: 0.1046/j.1365-2648.1998.00711.x]

50 **Chumbler NR**, Grimm JW, Cody M, Beck C. Gender, kinship and caregiver burden: the case of community-dwelling memory impaired seniors. *Int J Geriatr Psychiatry* 2003; **18**: 722-732 [PMID: 12891641 DOI: 10.1002/gps.912]

51 **Collins C**, Jones R. Emotional distress and morbidity in dementia carers: a matched comparison of husbands and wives. *Int J Geriatr Psychiatry* 1997; **12**: 1168-1173 [PMID: 9444540 DOI: 10.1002/(SICI)1099-1166(199712)12: 12<1168: : AID-GPS711>3.0.CO; 2-F]

52 **Vitaliano PP**, Zhang J, Scanlan JM. Is caregiving hazardous to one's physical health? A meta-analysis. *Psychol Bull* 2003; **129**: 946-972 [PMID: 14599289 DOI: 10.1037/0033-2909.129.6.946]

53 **Bivins MI**. Influence of gender on caregiving for early and moderate stage Alzheimer's disease patients. Walden University. 2013. Available from: URL: http://gradworks.umi.com/35/90/3590438.html

54 **Annerstedt L**, Elmståhl S, Ingvad B, Samuelsson SM. Family caregiving in dementia--an analysis of the caregiver's burden and the "breaking-point" when home care becomes inadequate. *Scand J Public Health* 2000; **28**: 23-31 [PMID: 10817311 DOI: 10.1080/713797382]

55 **Ekwall AK**, Hallberg IR. The association between caregiving satisfaction, difficulties and coping among older family caregivers. *J Clin Nurs* 2007; **16**: 832-844 [PMID: 17462034 DOI: 10.1111/j.1365–2702.2006.01382.x]

56 **Kuuppelomäki M**, Sasaki A, Yamada K, Asakawa N, Shimanouchi S. Family carers for older relatives: sources of satisfaction and related factors in Finland. *Int J Nurs Stud* 2004; **41**: 497-505 [PMID: 15120978 DOI: 10.1016/j.ijnurstu.2003.11.004]

57 **López J**, López-Arrieta J, Crespo M. Factors associated with the positive impact of caring for elderly and dependent relatives. *Arch Gerontol Geriatr* 2005; **41**: 81-94 [PMID: 15911041 DOI: 10.1016/j.archger.2004.12.001]

58 **Rose-Rego SK**, Strauss ME, Smyth KA. Differences in the perceived well-being of wives and husbands caring for persons with Alzheimer's disease. *Gerontologist* 1998; **38**: 224-230 [PMID: 9573667 DOI: 10.1093/geront/38.2.224]

69 **Välimäki TH**, Vehviläinen-Julkunen KM, Pietilä AM, Pirttilä TA. Caregiver depression is associated with a low sense of coherence and health-related quality of life. *Aging Ment Health* 2009; **13**: 799-807 [PMID: 19888700 DOI: 10.1080/13607860903046487]

60 **McKee K**, Spazzafumo L, Nolan M, Wojszel B, Lamura G, Bien B. Components of the difficulties, satisfactions and management strategies of carers of older people: a principal component analysis of CADI-CASI-CAMI. *Aging Ment Health* 2009; **13**: 255-264 [PMID: 19347692 DOI: 10.1080/13607860802342219]

61 **Gilligan C**. In a different voice. Cambridge MA: Harvard University Press, 1982

62 **Walker AJ**. Conceptual perspectives on gender and caregiving. In: Dwyer JW, Coward RT. Gender, families and elder care. Newbury Park, CA: Sage, 1992: 34-46

63 **Guberman N**, Maheu P, Maillé C. Women as family caregivers: why do they care? *Gerontologist* 1992; **32**: 607-617 [PMID: 1427272 DOI: 10.1093/geront/32.5.607]

64 **Kasuya RT**, Polgar-Bailey P, Takeuchi R. Caregiver burden and burnout. A guide for primary care physicians. *Postgrad Med* 2000; **108**: 119-123 [PMID: 11126138 DOI: 10.3810/pgm.2000.12.1324]

65 **Kim H**, Chang M, Rose K, Kim S. Predictors of caregiver burden in caregivers of individuals with dementia. *J Adv Nurs* 2012; **68**: 846-855 [PMID: 21793872 DOI: 10.1111/j.1365-2648.2011.05787.x]

66 **Gonyea JG**, O'Connor M, Carruth A, Boyle PA. Subjective appraisal of Alzheimer's disease caregiving: the role of self-efficacy and depressive symptoms in the experience of burden. *Am J Alzheimers Dis Other Demen* 2005; **20**: 273-280 [PMID: 16273992 DOI: 10.1177/153331750502000505]

67 **Wallsten SS**. Effects of caregiving, gender, and race on the health, mutuality, and social supports of older couples. *J Aging Health* 2000; **12**: 90-111 [PMID: 10848127 DOI: 10.1177/089826430001200105]

68 **Barusch AS**, Spaid WM. Gender differences in caregiving: why do wives report greater burden? *Gerontologist* 1989; **29**: 667-676 [PMID: 2513266 DOI: 10.1093/geront/29.5.667]

69 **Välimäki TH**, Vehviläinen-Julkunen KM, Pietilä AM, Pirttilä TA. Caregiver depression is associated with a low sense of coherence and health-related quality of life. *Aging Ment Health* 2009; **13**: 799-807 [PMID: 19888700 DOI: 10.1080/13607860903046487]

70 **Thompson RL**, Lewis SL, Murphy MR, Hale JM, Blackwell PH, Acton GJ, Clough DH, Patrick GJ, Bonner PN. Are there sex differences in emotional and biological responses in spousal caregivers of patients with Alzheimer's disease? *Biol Res Nurs* 2004; **5**: 319-330 [PMID: 15068661 DOI: 10.1177/1099800404263288]

71 **Schäufele M**, Köhler L, Weyrerer S. gender differences in caregiver burden and depression: a population-based study in Germany. *European Psychiatry* 2007; **22** Suppl 1: S4–S5 [DOI: 10.1016/j.eurpsy.2007.01.018]

72 **Lutzky SM**, Knight BG. Explaining gender differences in caregiver distress: the roles of emotional attentiveness and coping styles. *Psychol Aging* 1994; **9**: 513-519 [PMID: 7893422 DOI: 10.1037/0882-7974.9.4.513]

73 **Adams B**, Aranda MP, Kemp B, Takagi K. Ethnic and gender differences in distress among Anglo-American, African-American, Japanese-American, and Mexican-American spousal caregivers of persons with dementia. *J Clin Geropsychol* 2002; **8**: 279-301 [DOI: 10.1023/A: 1019627323558]

74 **González-Salvador MT**, Arango C, Lyketsos CG, Barba AC. The stress and psychological morbidity of the Alzheimer patient caregiver. *Int J Geriatr Psychiatry* 1999; **14**: 701-710 [PMID: 10479740 DOI: 10.1002/(SICI)1099-1166(199909)14: 9<701: : AID-GPS5>3.0.CO; 2-#]

75 **Shields CG**. Family interaction and caregivers of Alzheimer's disease patients: correlates of depression. *Fam Process* 1992; **31**: 19-33 [PMID: 1559593 DOI: 10.1111/j.1545-5300.1992.00019.x]

76 **Brodaty H**, Hadzi-Pavlovic D. Psychosocial effects on carers of living with persons with dementia. *Aust N Z J Psychiatry* 1990; **24**: 351-361 [PMID: 2241719 DOI: 10.3109/00048679009077702]

77 **Neundorfer MM**. Coping and health outcomes in spouse caregivers of persons with dementia. *Nurs Res* 1991; **40**: 260-265 [PMID: 1896322 DOI: 10.1097/00006199-199109000-00002]

78 **Hinrichsen GA**, Niederehe G. Dementia management strategies and adjustment of family members of older patients. *Gerontologist* 1994; **34**: 95-102 [PMID: 8150316 DOI: 10.1093/geront/34.1.95]

79 **Abdollahpour I**, Noroozian M, Nedjat S, Majdzadeh R. Caregiver Burden and its Determinants among the Family Members of Patients with Dementia in Iran. *Int J Prev Med* 2012; **3**: 544-551 [PMID: 22973484 DOI: 10.1177/0891988714524627]

80 **Zarit SH**, Edwards AB. Family caregiving: research and clinical intervention. In: RT Woods. Psychological problems of ageing: assessment, treatment and care. Chichester: John Wiley and Sons, 1999: 153-193

81 **Karlikaya G**, Yukse G, Varlibas F, Tireli H. Caregiver burden in dementia: A study in the Turkish population. *Internet J Neurol* 2005; **4**: 12-26. [DOI: 19655975]

82 **Mohamed S**, Rosenheck R, Lyketsos CG, Schneider LS. Caregiver burden in Alzheimer disease: cross-sectional and longitudinal patient correlates. *Am J Geriatr Psychiatry* 2010; **18**: 917-927 [PMID: 20808108 DOI: 10.1097/JGP.0b013e3181d5745d]

83 **Rosdinom R**, Zarina MZ, Zanariah MS, Marhani M, Suzaily W. Behavioural and psychological symptoms of dementia, cognitive impairment and caregiver burden in patients with dementia. *Prev Med* 2013; **57** Suppl: S67-S69 [PMID: 23313789 DOI: 10.1016/j.ypmed.2012.12.025]

84 **Lindqvist G**. Informal home caregiving in a gender perspective: a selected literature review. *J Nur Res* 2004; **24**: 26-30 [DOI: 10.1177/010740830402400406]

85 **Schulz R**, O'Brien AT, Bookwala J, Fleissner K. Psychiatric and physical morbidity effects of dementia caregiving: prevalence, correlates, and causes. *Gerontologist* 1995; **35**: 771-791 [PMID: 8557205 DOI: 10.1093/geront/35.6.771]

86 **Bédard M**, Pedlar D, Martin NJ, Malott O, Stones MJ. Burden in caregivers of cognitively impaired older adults living in the community: methodological issues and determinants. *Int Psychogeriatr* 2000; **12**: 307-332 [PMID: 11081952 DOI: 10.1017/S1041610200006426]

87 **Pinquart M**, Sörensen S. Differences between caregivers and noncaregivers in psychological health and physical health: a meta-analysis. *Psychol Aging* 2003; **18**: 250-267 [PMID: 12825775 DOI: 10.1037/0882-7974.18.2.250]

88 **Pinquart M**, Sörensen S. Correlates of physical health of informal caregivers: a meta-analysis. *J Gerontol B Psychol Sci Soc Sci* 2007; **62**: P126-P137 [PMID: 17379673 DOI: 10.1093/geronb/62.2.P126]

89 **Sörensen S**, Conwell Y. Issues in dementia caregiving: effects on mental and physical health, intervention strategies, and research needs. *Am J Geriatr Psychiatry* 2011; **19**: 491-496 [PMID: 21502853 DOI: 10.1097/JGP.0b013e31821c0e6e]

90 **Gitlin LN**, Belle SH, Burgio LD, Czaja SJ, Mahoney D, Gallagher-Thompson D, Burns R, Hauck WW, Zhang S, Schulz R, Ory MG. Effect of multicomponent interventions on caregiver burden and depression: the REACH multisite initiative at 6-month follow-up. *Psychol Aging* 2003; **18**: 361-374 [PMID: 14518800 DOI: 10.1037/0882-7974.18.3.361]

91 **Donaldson C**, Tarrier N, Burns A. Determinants of carer stress in Alzheimer's disease. *Int J Geriatr Psychiatry* 1998; **13**: 248-256 [PMID: 9646153 DOI: 10.1002/(SICI)1099-1166(199804)13: 4<248: : AID-GPS770>3.3.CO; 2-S]

92 **Marks NF**, Lambert JD, Choi H. Transitions to caregiving, gender, and psychological well-being: a prospective U.S. national study. *J Marriage Fam* 2002; **64**: 657–667 [DOI: 10.1111/j.1741-3737.2002.00657.x]

93 **Caqueo-Urízar A**, Miranda-Castillo C, Lemos Giráldez S, Lee Maturana SL, Ramírez Pérez M, Mascayano Tapia F. An updated review on burden on caregivers of schizophrenia patients. *Psicothema* 2014; **26**: 235-243 [PMID: 24755026 DOI: 10.7334/psicothema2013.86]

94 **Awad AG**, Voruganti LN. The burden of schizophrenia on caregivers: a review. *Pharmacoeconomics* 2008; **26**: 149-162 [PMID: 18198934 DOI: 10.2165/00019053-200826020-00005]

95 **Chan SW**. Global perspective of burden of family caregivers for persons with schizophrenia. *Arch Psychiatr Nurs* 2011; **25**: 339-349 [PMID: 21978802 DOI: 10.1016/j.apnu.2011.03.008]

96 **Bloch S**, Szmukler GI, Herrman H, Benson A, Colussa S. Counseling caregivers of relatives with schizophrenia: themes, interventions, and caveats. *Fam Process* 1995; **34**: 413-425 [PMID: 8674522 DOI: 10.1111/j.1545-5300.1995.00413.x]

97 **Jenkins JH**, Schumacher JG. Family burden of schizophrenia and depressive illness. Specifying the effects of ethnicity, gender and social ecology. *Br J Psychiatry* 1999; **174**: 31-38 [PMID: 10211148 DOI: 10.1192/bjp.174.1.31]

98 **Ola BA**. The influence of burden of care and perceived stigma on expressed emotions of relatives of stable persons with schizophrenia in Nigerian semi-urban/urban settings. Masters dissertation in international mental health. Universidade Nova de Lisboa. 2013. Available from: URL: http//run.unl.pt/bitstream/10362/9673/.../Ola Bolanle TM 2013.pdf

99 **Pike B**. Caregiver experiences of parents who support adult children with schizophrenia. Master of Health Science thesis. Auckland University of Technology. [accessed 2015 May 13]. Available from: URL: http//www.supportingfamilies.org.nz/.../Supporting\_a\_Person\_with\_Schizophrenia.sflb.ashx

100 **Wancata J**, Freidl M, Krautgartner M, Friedrich F, Matschnig T, Unger A, Gössler R, Frühwald S. Gender aspects of parents' needs of schizophrenia patients. *Soc Psychiatry Psychiatr Epidemiol* 2008; **43**: 968-974 [PMID: 18587676 DOI: 10.1007/s00127-008-0391-4]

101 **Baronet AM**. Factors associated with caregiver burden in mental illness: a critical review of the research literature. *Clin Psychol Rev* 1999; **19**: 819-841 [PMID: 10520437 DOI: 10.1016/S0272-7358(98)00076-2]

102 **Collings S**. Who cares for people with schizophrenia: family carers’ health, circumstances and adjustment. Blue Skies Report. [accessed 2015 May 15]. Available from: URL: http//www.mentalhealth.org.nz/.../Who-Cares-for-People-with-Schizophrenia

103 **Chien WT**, Chan SW, Thompson DR. Effects of a mutual support group for families of Chinese people with schizophrenia: 18-month follow-up. *Br J Psychiatry* 2006; **189**: 41-49 [PMID: 16816305 DOI: 10.1192/bjp.bp.105.008375]

104 **Chien WT**. Effectiveness of psychoeducation and mutual support group program for family caregivers of chinese people with schizophrenia. *Open Nurs J* 2008; **2**: 28-39 [PMID: 19319218 DOI: 10.2174/1874434600802010028]

105 **Barak D**, Solomon Z. In the shadow of schizophrenia: a study of siblings' perceptions. *Isr J Psychiatry Relat Sci* 2005; **42**: 234-241 [PMID: 16618055]

106 **Kumar S**, Mohanty S. Spousal burden of care in schizophrenia. *J Indian Acad Appl Psychol* 2007; **33**: 189-194

107 **Boydell J**, Onwumere J, Dutta R, Bhavsar V, Hill N, Morgan C, Dazzan P, Morgan K, Pararajan M, Kuipers E, Jones P, Murray R, Fearon P. Caregiving in first-episode psychosis: social characteristics associated with perceived 'burden' and associations with compulsory treatment. *Early Interv Psychiatry* 2014; **8**: 122-129 [PMID: 23458284 DOI: 10.1111/eip.12041]

108 **Tennakoon L**, Fannon D, Doku V, O'Ceallaigh S, Soni W, Santamaria M, Kuipers E, Sharma T. Experience of caregiving: relatives of people experiencing a first episode of psychosis. *Br J Psychiatry* 2000; **177**: 529-533 [PMID: 11102328 DOI: 10.1192/bjp.177.6.529]

109 **Caqueo-Urízar A**, Gutiérrez-Maldonado J. Burden of care in families of patients with schizophrenia. *Qual Life Res* 2006; **15**: 719-724 [PMID: 16688504 DOI: 10.1007/s11136-005-4629-2]

110 **Ratnawati DM**, Loebis HB. Relationship of burden with characteristic sociodemographic caregiver in schizophrenic patients. *J Biol* 2014; **21**: 56-59

111 **Kaushik P**, Bhatia MS. Burden and quality of life in spouses of patients with schizophrenia and bipolar disorders. *Delhi Psychiatry J* 2013; **16**: 83-88

112 **Gutiérrez-Maldonado J**, Caqueo-Urízar A, Kavanagh DJ. Burden of care and general health in families of patients with schizophrenia. *Soc Psychiatry Psychiatr Epidemiol* 2005; **40**: 899-904 [PMID: 16245190 DOI: 10.1007/s00127-005-0963-5]

113 **Boyer L**, Caqueo-Urízar A, Richieri R, Lancon C, Gutiérrez-Maldonado J, Auquier P. Quality of life among caregivers of patients with schizophrenia: a cross-cultural comparison of Chilean and French families. *BMC Fam Pract* 2012; **13**: 42 [PMID: 22640267 DOI: 10.1186/1471-2296-13-42]

114 **Zahid MA**, Ohaeri JU. Relationship of family caregiver burden with quality of care and psychopathology in a sample of Arab subjects with schizophrenia. *BMC Psychiatry* 2010; **10**: 71 [PMID: 20831806 DOI: 10.1186/1471-244X-10-71]

115 **Ghosh S**, Greenberg JS. Gender difference in caregiving experience and the importance of social participation and marital satisfaction among aging mothers and fathers of adults with schizophrenia. *Soc Work Ment Health* 2012; **10**: 146-168 [DOI: 10.1080/15332985.2011.600637]

116 **Noh S**, Avison WR. Spouses of discharged psychiatric patients: factors associated with their experience of burden. *J Marriage Fam* **1988**; 377-389 [DOI: 10.2307/352004]

117 **Shah STH**, Sultan SM, Faisal M, Irfan M. Psychological distress among caregivers of patients with schizophrenia. *J Ayub Med Coll Abbottabad* 2013; **25**: 27-30

118 **Kumari S**, Singh AR, Verma AN, Verma PK, Chaudhury S. Subjective burden on spouses of schizophrenia patients. *Ind Psychiatry J* 2009; **18**: 97-100 [PMID: 21180485]

119 **Sreeja I**, Sandhya G, Rakesh L, Singh M. Comparison of burden between family caregivers of patients having schizophrenia and epilepsy. *Inter J Epidemiol* 2009; **6**: 2

120 **Yusuf AJ**, Nuhu FT. Factors associated with emotional distress among caregivers of patients with schizophrenia in Katsina, Nigeria. *Soc Psychiatry Psychiatr Epidemiol* 2011; **46**: 11-16 [PMID: 19907909 DOI: 10.1007/s00127-009-0166-6]

121 **Seng BK**. The impact of schizophrenia: the burden of care. PhD Thesis. Department of Social Work, National University of Singapore. 2005-05-15. Available from: URL: http//scholarbank.nus.edu.sg/bitstream/handle/.../full thesis final.pdf

122 **Navidian A**, Bahari F. Burden experienced by family caregivers of patients with mental disorders. *Pakistani J Psychol Res* 2008; **23**: 19-28

123 **Barman N**, Chakravorty P. A descriptive study to assess the level of stress among family members of selected mentally ill clients attending psychiatry OPD of a tertiary care teaching hospital. *Open J Psych All Sci*2012; **3**: 65-73

124 **Margetić BA**, Jakovljević M, Furjan Z, Margetić B, Marsanić VB. Quality of life of key caregivers of schizophrenia patients and association with kinship. *Cent Eur J Public Health* 2013; **21**: 220-223 [PMID: 24592728]

125 **Perlick D**, Clarkin JF, Sirey J, Raue P, Greenfield S, Struening E, Rosenheck R. Burden experienced by care-givers of persons with bipolar affective disorder. *Br J Psychiatry* 1999; **175**: 56-62 [PMID: 10621769 DOI: 10.1192/bjp.175.1.56]

126 **Zendjidjian X**, Richieri R, Adida M, Limousin S, Gaubert N, Parola N, Lançon C, Boyer L. Quality of life among caregivers of individuals with affective disorders. *J Affect Disord* 2012; **136**: 660-665 [PMID: 22100129 DOI: 10.1016/j.jad.2011.10.011]

127 **Reinares M**, Vieta E, Colom F, Martínez-Arán A, Torrent C, Comes M, Goikolea JM, Benabarre A, Daban C, Sánchez-Moreno J. What really matters to bipolar patients' caregivers: sources of family burden. *J Affect Disord* 2006; **94**: 157-163 [PMID: 16737741 DOI: 10.1016/j.jad.2006.04.022]

128 **Borowiecka-Kluza JE**, Miernik-Jaeschke M, Jaeschke R, Siwek M, Dudek D. [The affective disorder-related burden imposed on the family environment--an overview]. *Psychiatr Pol* 2013; **47**: 635-646 [PMID: 24946470]

129 **Fadden G**, Bebbington P, Kuipers L. Caring and its burdens. A study of the spouses of depressed patients. *Br J Psychiatry* 1987; **151**: 660-667 [PMID: 3446310 DOI: 10.1192/bjp.151.5.660]

130 **Gandhi S**, Thennarasu K. burden among caregivers of clients with depression – a scientific study. *International Journal of Advanced Nursing Science and Practice* 2012; **1**: 20-28

131 **Dudek D**, Zieba A, Jawor M, Szymaczek M, Opila J, Dattilio FM. The impact of depressive illness on spouses of depressed patients. *J Cogn Psychother* 2001; **15**: 49-57

132 **Perlick DA**, Gonzalez J, Michael L, Huth M, Culver J, Kaczynski R, Calabrese J, Miklowitz DJ. Rumination, gender, and depressive symptoms associated with caregiving strain in bipolar disorder. *Acta Psychiatr Scand* 2012; **126**: 356-362 [PMID: 22607486 DOI: 10.1111/j.1600-0447.2012.01874.x]

133 **Sharma N**. The relationship of gender and burden among caregivers of patients with chronic mental illnesses. MD Psychiatry thesis. Department of Psychiatry, Postgraduate Institute of Medical Education and Research, Chandigarh: India, 2014

134 **Rose SK**, Strauss ME, Neundorfer MM, Smyth KA, Stuckey JC. The relationship of self-restraint and distress to coping among spouses caring for persons with Alzheimer’s disease. *J Applied Gerontology* 1997; **16**: 91-103 [DOI: 10.1177/073346489701600105]

135 **Goossens PJ**, Van Wijngaarden B, Knoppert-van Der Klein EA, Van Achterberg T. Family caregiving in bipolar disorder: caregiver consequences, caregiver coping styles, and caregiver distress. *Int J Soc Psychiatry* 2008; **54**: 303-316 [PMID: 18720891 DOI: 10.1177/0020764008090284]

136 **Nehra R**, Kulhara P, Verma SK. Adaptation of the Social Support Questionnaire in Hindi: Indian setting. *Ind J Clin Psychol* 1996; **23**: 33-39

137 **Antonucci TC**. Social support and social relationships. In: Binstock RH, George LK. Handbook of aging and the social sciences. Orlando, FL: Academic Press, 1990: 205–225

138 **Chakrabarti S**. Cultural aspects of caregiver burden in psychiatric disorders. *World J Psychiatr* 2013; **3**: 85 -92 [DOI: 10.5498/wjp.v3.i4.85]

139 **Spitzer D**, Neufeld A, Harrison M, Hughes K. Caregiving in transnational context: “my wings have been cut; where can I fly?” *Gender and Society* 2003; **17**: 267-286 [DOI: 10.1177/0891243202250832]

140 **Knight BG**, Sayegh P. Cultural values and caregiving: the updated sociocultural stress and coping model. *J Gerontol B Psychol Sci Soc Sci* 2010; **65B**: 5-13 [PMID: 19934166 DOI: 10.1093/geronb/gbp096]

141 **Gupta R**, Rowe N, Pillai VK. Perceived caregiver burden in India: implications for social services. *Affilia* 2009; **24**: 69-1-12 [DOI: 10.1177/0886109908326998]

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