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Employment Adjustment and Mental Health of Employed Family Caregivers in Canada

by

Lun Li

A THESIS

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Abstract

In Canada, with the population aging, the need of family caregiving to older adults is increasing. Family caregivers make employment adjustment in order to fulfill caregiving responsibility. However, the studies on the family caregivers' mental health outcomes associated with employment adjustment are limited. Based on the role theory and stress process model, the current study examined the relationship between employment adjustment and mental health outcomes among family caregivers, and also tested the functions of family-to-work role conflict and workplace support in this relationship.

Data were drawn from the 2012 Canada General Social Survey Cycle 26: Caregiving and Care Receiving, which provided a sample of 1,696 employed family caregivers. Hierarchical linear regression and conditional process analysis were used to examine the relationship among employment adjustment, mental health, family-to-work role conflict, and workplace support. The analysis results revealed that employment adjustment is significantly associated with negative mental health outcomes, including worse self-rated mental health, more psychological symptoms, and higher life and caregiving stress level. In addition, the mediating effect of family-to-work role conflict was confirmed, such that family-to-work role conflict mediates the association between employment adjustment and mental health outcomes. Furthermore, the moderating effect of workplace support was identified in the relationship between employment adjustment and family-to-work role conflict.

Despite some limitations, current study contributes to the existing body of literature on the mental health outcomes of family caregivers by examining the function of employment adjustment, family-to-work role conflict and workplace support at the same time. The study results also call for greater attention to provide caregiver-friendly workplace support to family caregivers.

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Chapter One: Introduction

1.1 Background

1.1.1 Snapshot on Family Caregiving

Family caregiving for older adults has received increased attention within academic and public policy arenas since the 1960s (Carretero, Garces, Rodenas, & Sanjose, 2009; Rote, Angel, & Markides, 2015; Stephens, Townsend, Martire, & Druley, 2001; Zarit, Reever, & Bach-Peterson, 1980). Empirical research has shed light on various aspects of family caregiving, including the decision to become a family caregiver, conflict between caregiving and other familial or social roles, potential benefits for care receivers and health care system, social, financial, health, and emotional caregiving outcomes, and intervention programs providing support to family caregivers (Anngela-Cole & Hilton, 2009; Carbone & Gugliucci, 2014; Carretero et al., 2009; Clay, Roth, Wadley, & Haley, 2008; Kennet, Burgio, & Schulz, 2000; Lai, 2007, 2010; Malhotra, Østbye, Matchar, & Chan, 2012; Reis, McGinty, & Jones, 2003; Schulz & Sherwood, 2008; Walker, Pratt, & Eddy, 1995). This comprehensive body of literature provides information to help policymakers, service providers, and other private businesses assist family caregivers in various ways.

Koin (1989) defined a caregiver as "the person or family member who assumes responsibility and usually offers hands-on care for a frail and often demented old person" (p. 310), while the National Alliance for Caregiving (2010) in the United States defined a family caregiver as "someone who is responsible for attending to the daily needs of another person" (p. 12). Some scholars further define caregivers according to the purpose and context of their study; for instance, in the case of caregivers for aging people with dementia, Andrén and Elmståhl (2008) identified the family caregiver as "the person who had the main responsibility for the person with dementia and who visited at least once in two months" (p. 792). Although the definitions of family caregivers may vary according to the focus of the study, these definitions generally agree on the roles and responsibilities of family caregivers in supporting their family members or friends in health care and daily activities. This study uses Health Canada's (2002) definition of a family caregiver as "an individual who is currently providing care to another family member in their home (or their family member's home), who has a physical or mental disability, is chronically ill or is frail" (para. 2).

Savage and Bailey (2004) defined a care receiver as "a person who lives with some form of chronic condition that causes difficulties in completing the tasks of daily living" (p. 103). A 2015 report by the National Alliance for Caregiving and the American Association of Retired Persons (AARP) Public Policy Institute indicated that among approximately 1000 care receivers aged 50 years and older, about 63% suffer from long-term physical conditions and 34% have short-term physical conditions, as well as mental conditions necessitating care include memory problems (29%), emotional and mental health problems (19%), behavioral issues (5%), and developmental and intellectual disorders (3%). In addition, because friends also play significant roles in the informal caring system, they are frequently included in family caregiving studies (Fine, 2012; Himes & Reidy, 2000; Muraco & Fredriksen-Goldsen, 2014; Penning & Wu, 2015). In Canada, friends, colleagues and/or neighbors are the second most common category of care receivers, more so than grandparents or siblings (Sinha, 2015). Therefore, this study also includes caregivers for non-kin care receivers such as friends.

A family caregiver can support others from any age group, such as young children, adults and/or seniors. This study focuses on care receivers who are older adults of 65 years and older. The primary responsibility of family caregivers for older adults is to provide support and assistance in activities of daily living (ADLs), which include eating, bathing, dressing, toileting, and walking, as well as instrumental activities of daily living (IADLs), which include financial management, meal preparation, housework, and basic home maintenance (Dwyer, Lee, & Jankowski, 1994; Richardson, Lee, Berg-Weger, & Grossberg, 2013). Family caregivers are also often responsible for more complex tasks, such as managing health care (e.g., pain management), overseeing paid homecare workers, managing behaviour problems, and talking with health care providers (Levine, Reinhard, Feinberg, Albert, & Hart, 2003; McLennon, Bakas, Jessup, Habermann, & Weaver, 2014; Valeberg, Kolstad, Smastuen, Miaskowski, & Rustøen, 2013).

The population in Canada is progressively aging. According to Canada's 2016 census, there are about 6 million adults aged 65 years and older, who make up 16.9% of Canada's total population (Statistics Canada, 2017a). The aging population increased by 16.7% since the 2011 census, compared to a 14.1% increase between 2006 and 2011 (Statistics Canada, 2017a; 2018a). The 2011 census identified about 9.6 million baby boomers in Canada, and since 2011 this segment of the population has reached the ages of 65 or over (Statistics Canada, 2018b). As the baby boomers age, older adults will represent about 23% of the Canadian population in 2031 and about 25% in 2036 (Statistics Canada, 2018c). In Canada, the need for family caregiving is increasing. Currently, family members and friends provide roughly 70% to 80% of care for aging individuals with chronic health conditions or disabilities (Spinks & Lero, 2011). About 8.1 million Canadians identify themselves as family caregivers, and 47% of family caregivers provide care and support to parents or parents-in-law with long-term health conditions, disabilities, or other age-related needs (Sinha, 2015).

Family caregiving is integral to public health. Both care receivers and the health care system benefit from the unpaid health care or daily activity support provided by family caregivers. The economic benefits of informal care for the broader health care system are significant. It is estimated that at least 25% to 28% of care and support in Canada is provided for seniors or aging-related needs (Cranswick & Dosman, 2008; Sinha, 2015). The annual economic contribution of family caregivers in Canada is approximately $25 billion (Hollander, Liu, & Chappell. 2009), and lower-intensity caregiving (less than five hours per week) can provide the Canadian government with annual benefits of about $4.4 billion (Jacobs, Lilly, Ng, & Coyte, 2013).

Many older adults plan to stay at home as long as they can, regardless of their health and physical conditions (Canadian Association of Retired Persons, 2012; Sabia, 2008). A 2017 survey of Canadians aged 45 years and older demonstrated that about 85% of the respondents planned to remain at home (Homestars, 2017). Staying at home in later life, or aging in place, is encouraged by policymakers and health care providers, and supported by aging people themselves (Hwang, 2008; World Health Organization, 2007). Aging in place supports older adults' independence, sense of security, and maintenance of connections to family, friends, and other networks or resources in the community (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995; Arksey & Glendinning, 2007; Cantor, 1991; Wiles, Leibing, Guberman, Reeve, & Allen, 2011). The services and support necessary to promote aging in place may be insufficient or difficult to access, especially with a shortage of care workers for older adults in the community (Bourgeault, Parpia, & Atanackovic, 2010). Therefore, family caregiving plays a critical role in supporting aging people stay at home, and keep healthy and active.

1.1.2 Mental Health as a Consequence of Family Caregiving

Many studies have identified and confirmed the deterioration of mental health as a negative consequence of caregiving (Arai, Kumamoto, Mizuno, & Washio, 2014; Vitaliano, Zhang, & Scanlan, 2003). The World Health Organization (WHO, 2014) defined mental health as a state of well-being in which "every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (para. 1). Similarly, the United States Public Health Service (USPHS, 1999) defined mental health as "a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with people, and the ability to change and to cope with adversity" (p. 4). Studies in various fields have identified different, but closely relevant, indicators, both negative and positive, of mental health, including symptoms of distress, depression, anxiety, psychosomatic symptoms, self-esteem, life satisfaction, subjective well-being, sense of coherence, control of self, happiness, mental balance, and social involvement (Blais et al., 1999; Korkeila et al., 2003; Paul & Moser, 2009; Strand, Dalgard, Tambs, & Rognerud, 2003). The indicators of mental health are useful in determining the effects of family caregiving on the caregiver's well-being (Adams, 2008; Gupta, Isherwood, Jones, & Impe, 2015; Siegler, Brummett, Williams, Haney, & Dilworth-Anderson, 2010). Previous studies have also identified more and more factors that offer better explanations of the association between family caregiving and mental health consequences (Aranda & Knight, 1997; Deimling & Bass, 1986; Perez & Cruess, 2014).

1.1.3 Family Caregiving and Employment

Some research has focused on the impact of caregiving and working on family caregivers simultaneously (Doty, Jackson, & Crown, 1998; Lahaie, Earle, & Heymann, 2013; Reid & Hardy, 1999; Rozario & DeRienzis, 2008). One area of particular interest in the field of family caregiving is the experience of employed family caregivers, also known as caregiving employees or working caregivers (Covinsky et al., 2001; Lee, Walker, & Shoup, 2001; Tement & Korunka, 2015). An employed family caregiver is “anyone employed in an organization or business who also provides care for an older relative or friend, or an adult family member or friend with a disability” (Feinberg & AARP Public Policy Institute, 2018, p. 2). In Canada, most family caregivers aged between 45 and 64 years old are employed outside the home, including about 72% of female caregivers and 83% of male caregivers (Lilly, 2011). Similarly, in the United States, 60% of family caregivers are employed out of the home, and more than half of these work full-time (Family Caregiver Alliance, 2016). With so many caregivers engaging in double or even triple duties, support for this segment of the population is especially important.

Although previous studies have considered the role of employment in the health and well-being of caregivers, no solid conclusions have yet been reached. For example, it remains debatable whether caregiving and employment are competing or complementary factors (Scharlach, 1994). From the perspective of competing demand between family caregiving and employment, role strain, work-family role conflict, financial burdens or costs, and other employment issues become significant (Bauer & Sousa-Poza, 2015; Fine, 2012; Stone & Short, 1990). This line of inquiry suggests that the identified negative consequences of combining both caregiving and employment roles lead to deterioration of health and well-being in employed family caregivers. However, considerable evidence also suggests that employed family caregivers can benefit from multiple roles, particularly the resources and supports associated with different roles, such as workplace benefits (Hansen & Slagsvold, 2015).

The employment adjustment of employed family caregivers, which is referring the decision to reduce working hours, to take extra leave, or to take a lower-demand job in order to balance caregiving and employment (Brody, Saperstein, & Lawton, 1989; Evandrou & Glaser, 2003), is an emerging yet still understudied area. For example, in Canada, approximately one in seven employed family caregivers have reduced their working hours due to caregiving responsibilities, and about nine to ten working hours are cut back each week (Fast, 2015). Juratovac and Zauszniewski (2014) also emphasized the importance of understanding the work-caregiving circumstance as “more fluid than categories” (p. 194) and suggested examining the transition of employment status over time. However, many studies identify employment status as an indicator, rather than focusing on the status transition, because previous studies have mostly relied on the status of roles, rather than understanding the multiple roles from the perspective of role domain and the transition between different domains (Ashforth, Kreiner, & Fugate, 2000; Matthews, Winkel, & Wayne, 2014). As Matthews and colleagues (2010, 2014) have confirmed, role domain transitions (employment adjustment as one type) will positively affect individuals’ role conflict, which has been identified as a predictor of mental health issues (Allen & Armstrong, 2006; Fekete, Siegrist, Tough, & Brinkhof, 2018). Therefore, this current study considers role conflict as a major factor in understanding the relationship between employment adjustment and mental health of employed family caregivers.

1.1.4 Family Caregiving and Workplace Support

Another growing body of work centres on the effects of workplace support, also known as family-friendly policy or supportive workplace, on the health and well-being of employed family caregivers (Arksey, O’Malley, Baldwin, Harris, & Mason, 2002; Pavalko & Henderson, 2006). The workplace and employer are important resources for employed family caregivers, and various studies have recognized the positive influence of supportive work environment on the work-family balance and overall health and well-being of employed family caregivers (Kim, Ingersoll-Dayton, & Kwak, 2013; Mennino, Rubin, & Brayfield, 2005). In addition, after examining the global social and demographic changes and the gap and crisis in family caregiving, Fine (2012) reinforced the importance of supporting employed family caregivers and promoting caregiver friendly workplaces. In Canada, lots of studies are examining the significant role of workplace support in family caregiving (Fast, 2015; Lero, Spinks, Fast, Hilbrecht, & Tremblay, 2012; Sethi, Williams, & Ireson, 2016; Torjman, 2015).

1.2 Purpose of the Study

Family caregiving is a recognized public health issue (Schulz & Czaja, 2018; Talley & Crews, 2007), to gain further knowledge of family caregivers with regard to their mental health in the context of employment is of great importance. Furthermore, this knowledge base is necessary as family caregivers have played and will continue to play essential and irreplaceable roles in the health care system as the population ages. With an increasing awareness of employed family caregivers' challenges in managing work and family duties, more workplace support can promote healthier lives and inter-role balance.

This study investigates the mental health outcomes of employed family caregivers in Canada, particularly focusing on the perspective of employment adjustment, role conflict, and the availability of workplace support.

The following questions will be examined:

1. Is employment adjustment associated with mental health outcomes among employed family caregivers?
2. What are the functions of role conflict and workplace support in the relationship between employment adjustment and mental health outcomes among employed family caregivers?
    a. Does perceived role conflict mediate the relationship between employment adjustment and mental health outcomes?

b. Does workplace support moderate the relationship between employment adjustment and mental health outcomes?

1.3 Significance of the Study

In addition to the previous studies relating to employed family caregivers, there are some emerging trends in caregiving research. This study will contribute to the increasing body of work on the effect of employment adjustment on the mental health outcomes of employed family caregivers. From a theoretical perspective, this study will contribute to a deeper understanding of how the mental health of family caregiver is related to different factors, particularly in reference to employment adjustment, role conflict, and workplace support. From a practice and public policy perspective, the findings of this study will provide a knowledge base and empirical evidence to support the development of public policies and programs to promote the mental health of employed family caregivers, as well as to advocate changes in workplace culture to provide more support for Canadians who are involved in both caregiving and working.

1.4 Definition of Terms

The key terms in this study are defined and explained below.

Employed family caregiver: An employed family caregiver is an individual who provides care and support to family members, friends and others, and is employed in a workplace at the same time. This study specifically deals with family caregivers who provide care to older adults, aged 65 and over.

Employment adjustment: Employment adjustment refers to modification of employment involvement in order for family caregivers to fulfill their responsibilities to care receivers and perform relevant tasks (Sinha, 2013). Because this study focuses exclusively on employed family caregivers, family caregivers who leave the labour market as a consequence of their caregiving responsibilities or for other reasons will not be included.

Mental health: This study uses the definitions of mental health proposed by WHO (2014) and USPHS (1999), with self-rated mental health, psychological symptoms, life stress, and caregiving stress as the indicators of mental health.

Role conflict: This study discusses family-to-work role conflict when family caregivers make employment adjustment due to their caregiving responsibilities.

Workplace support: In this study, workplace support refers to family-friendly policies, such as flexible work arrangements, family leave related to caregiving and so on.

1.5 The Organization of the Thesis

This thesis is composed of five chapters. The first chapter, Introduction, provides the context, rationale, and purpose of this study. The second, Literature Review, begins with a review of the two major theories exploring the effects of family caregiving on mental health, which is followed by a review of available literature on family caregiving with regard to mental health, employment adjustment, role conflict, and workplace support. The chapter ends with a theoretical framework based on a review of the theories and literature. The third, Methodology, provides information related to the secondary data used in this study, the variables of interest, and the data analysis procedures. The fourth, Results, presents the results of quantitative data analysis and provides answers to the research questions. The fifth, Discussion, gives a detailed discussion of the findings, implications for public policies and programs, the limitations of this study, and suggestions for future research in caregiving related fields.

Chapter Two: Literature Review

2.1 Review of Theoretical Framework

The theoretical framework of this study is based on the role theory and stress process model. Of these two, role theory allows us to understand the relationship between caregiving and employment and the consequences of employment adjustment due to family caregiving. The stress process model allows us to understand the functions of role conflict and workplace support for employed family caregivers with regard to their mental health consequence.

2.1.1 Role Theory

Many studies of family caregiving have used role theory (Engle & Prince, 2012; Griffith, Gunter, & Allen, 2011), with two primary approaches being proposed. The first approach to role theory is role enhancement (Sieber, 1974), which emphasizes the benefits of multiple roles and proposes that through the accumulation of multiple roles, individuals can gain social integration, status, identity, "power, prestige, resources, and emotional gratification, including social recognition and a heightened sense of identity" (Moen, Robison, & Dempster-McClain, 1995, p. 260). Following the major assumption of role enhancement, employment can be considered as a positive resource. For example, in their qualitative study of 30 family caregivers, Hawranik and Strain (2007) found that work provided relief from caregiving and was important to the mental health of family caregivers because it made them feel that they had something for themselves. Such findings may be attributed to support received in the workplace, and to the feeling of self-worth, esteem, and reward from work positions (Orodenker, 1990; Stephens & Franks, 2009).

The second approach to role theory is role strain (Doress-Worters, 1994; Goode, 1960; Kopelman, Greenhaus, & Connolly, 1983). According to this stream of role theory, the performance of different roles may have negative consequences, due to the stress and competing demands of multiple roles and the relationships associated with the various roles (Reid & Hardy, 1999). Types of role strain include role overload, when demands from different roles exceed actual capabilities; role conflict, when demands of multiple roles are incompatible, linked to time and energy limitations; role captivity, when individuals wish to focus on career development but must spend time caregiving; and role restructuring, when individuals have to increase their responsibility to parents and other aging family members (Reid & Hardy, 1999).

Role strain theory has been used in many studies in the field of family caregiving (Doress-Worters, 1994; Fredriksen-Goldsen & Scharlach, 2006; Penning, 1998). Early research has demonstrated the negative effects of role strain on mental health, such as higher stress and reduced social contact (Stoller & Pugliesi, 1989). In a study based on 1,146 employed family caregivers, Fredriksen-Goldsen and Scharlach (2006) found that work and caregiving demands contribute most to role strain, with the demands of these roles presenting the greatest challenge to employed family caregivers. Similarly, in their study of 113 American adults providing care to their impaired parents, Morano and Sanders (2006) found that family caregivers who experienced more role captivity in their family caregiving role reported higher levels of depression.

Additionally, studies focusing on the relationship between employment status and mental health outcomes have shown that occupying several different roles does not necessarily become a source of stress and mental illness for individuals. Furthermore, the interaction among the different roles experienced by individuals can be the key cause of negative mental health consequences. For example, based on longitudinal data (243 caregivers) in Victoria, British Columbia, Reid, Stajduhar and Chappell (2010) found that employment status was not related to caregiver burden, well-being, or self-esteem. Also, the authors further pointed out that the effect of caregiving on caregivers' working performance was associated with all three examined caregiver outcomes, leading to higher levels of burden and lower levels of well-being and self-esteem (Reid et al., 2010).

When individuals occupy several competing roles and experience role overload, they may adopt coping strategies to deal with the situation. Matthews and colleagues (2010, 2014) introduced the concept of "inter-domain transition" to understand the coping strategies adopted by the individuals with role overload. Inter-domain transition, defined as the "physical and cognitive transitions made from one domain to another" (Matthews et al., 2010, p. 449), can be understood as the shift of resources from one domain, such as work, to another, such as family. Employed family caregivers making employment adjustment such as retiring early or reducing working hours can thus be seen as experiencing inter-domain transitions from work to family. Moreover, when individuals adopt inter-domain transition as a coping strategy to relocate their resources (time and energy) from one domain to another, they will experience increased role conflict (Kossek, Lautsch, & Eaton, 2006; Matthews et al., 2010, 2014; Shumate & Fulk, 2004). For example, when individuals experience a family-to-work transition, such as taking their work home and using the family time to finish work tasks, they will experience work-to-family role conflict since their ability to perform their family role is limited. In the same vein, when individuals experience a work-to-family transition, such as taking extra days off to support family issues, they are more likely to experience family-to-work role conflict since their capability to perform employee role is limited.

In this study, employment adjustment is one type of inter-domain transition, specifically a work-to-family domain transition, which is associated with increased family-to-work role conflict. Therefore, under the role theory framework, this study applies the concept of inter-domain transition to the examination of employment adjustment for family caregivers.

2.1.2 Stress Process Model

The stress process model of caregiving is outlined by Pearlin, Mullan, Semple, and Skaff (1990), who defined stress as “a consequence of a process comprising a number of interrelated conditions, including the socioeconomic characteristics and resources of caregivers and the primary and secondary stressors to which they are exposed” (p. 583). There are four critical domains in this framework: the caregiver’s background and context, mediators of stress such as coping and social support, stressors, and outcomes such as depression and anxiety. In the stress process, background and context affect stressors, mediators and outcomes, mediators affect stressors and outcomes, and stressors affect outcomes.

Among these domains, stressors are at the heart of the stress process of family caregiving. Stressors are conditions, experiences, and activities that may make family caregivers feel threatened, tired, frustrated, and even depressed. Pearlin and colleagues (1990) divided these stressors into primary and secondary stressors. Primary stressors include the care receivers’ situation, the hardship subjectively experienced by family caregivers, overload or burnout, and relational deprivation. Secondary stressors are effects of background characteristics and primary stressors, including role strains and intrapsychic strains (Pearlin et al., 1990). For instance, role strain is produced by several factors of involvement in family caregiving: family conflict, work-family role conflict, and the negative impact of caregiving on the caregiver’s financial and social life. Both primary and secondary stressors influence the outcomes of caregiving. One purpose of this study is to examine the function of role conflict, which the stress process model regards as a secondary stressor.

In addition, Pearlin and colleagues (1989, 1990) also emphasized the moderating functions of social support between stressors and health outcomes in the stress process. They proposed that social support not only lessens the intensity of the stressors, but also reduces the negative outcomes of stressors. The available support from family members, community, the workplace, and the government can help family caregivers deal with their situations. Lazarus and Folkman (1984) also suggest the importance of social support in affecting individuals' cognitive appraisal of their stressors and burdens, in addition to their coping ability and development of coping strategies. In other words, the social support provides an enabling function to deal with stressors, and perceived or received support facilitates a positive appraisal and better coping strategies, resulting in better health conditions for the family caregiver (Benight & Bandura, 2004; Weaver et al., 2005).

Many studies have examined the effects of social support on the caregiving outcomes (Goode, Haley, Roth, & Ford, 1998; Iavarone, Ziello, Pastore, Fasanaro, & Poderice, 2014; Kim, Carver, Shaffer, Gansler, & Cannady, 2015; MaCallum, Longmire, & Knight, 2007). Social support from family members and professional staff has been found to significantly buffer strain and distress, strengthening caregivers' positive appraisal and attitudes, and reinforcing their coping strategies to deal with family caregiving stressors (Anngela-Cole & Hilton 2009; Chun, Knight, & Youn, 2007; Cox & Monk 1990; Hahn, Kim, & Chiriboa, 2011). For example, caregivers with more family members living in the same household tend to gain more emotional support, which has a positive effect on their mental health (Chun et al., 2007; Hahn et al., 2011), and social-emotional support can protect family caregivers against secondary stressors such as financial strain (Gaugler et al., 2008). In addition, some studies have also pointed out the positive role of workplace support in reducing the negative mental health consequences of family caregivers (Brown & Pitt-Catsouphes, 2016; Yucel & Minnotte, 2017). Therefore, when studying employed family caregivers, it is important to consider workplace support as a potential factor to buffer the association between family caregiving and the family caregiver's mental health condition outcomes.

2.2 Review of Empirical Literature

2.2.1 Employment Adjustment and Mental Health

Employment and Mental Health Condition of Family Caregivers. Employed family caregivers face additional challenges in balancing employment and caregiving commitments unlike family caregivers who are not employed outside the home do not. The roles of employee and caregiver may compete for the limited time and energy. Because of their caregiving responsibilities, employed family caregivers might go to work late, miss work and/or training, lose productivity and/or promotions, or miss opportunities for career development (Albert & Schultz, 2010). Such losses of earnings, employment-related benefits, or career opportunities thus become significant stressors for those providing care to aging family members (Juratovac & Zauszniewski, 2014). Employment and work demands also affect caregivers' involvement in and attitudes toward caring for family members or friends. Other studies suggest that individuals may tend to reduce caregiving hours rather than reduce working hours, or may be more likely to stop caregiving than to leave work (Dautzenberg et al., 2000; Moen, Robison, & Fields, 1994).

Considerable evidence supports the argument that employment status can negatively affect caregivers' mental health due to multiple role demands. For example, one American study of 105 employed adult daughters who were caregivers for their parents (Stephens, Franks, & Atienza, 1997) found that the caring for aging parents was significantly associated with depression among employed female caregivers, particularly through the mutual interferences of work and caregiving responsibilities. In their study of a sample of 278 women, Stephens and associates (2001) revealed that providing care to parents or parents-in-law with physical or mental impairments negatively affects the psychological well-being of women who simultaneously occupy roles of caregiver, wife, mother, and employee. Most of the participants in the study said that the role conflict they experienced involved their role of caregiver, which further led to depressive symptoms and restrictions in leisure activity. Another study conducted among 722 Japanese family caregivers (Honda, Data, Abe, Aoyagi, & Honda, 2014) also indicated that employees who simultaneously provided care to aging relatives were significantly associated with an increased risk of depression.

Some studies have noticed that employed family caregivers enjoy better mental health condition than those who are not employed, since family caregivers may benefit from social, personal, and material resources associated with different roles. Martire and Stephens (2003) pointed out that the feeling of achievement and confidence in one role could have positive effects on other roles, which would further make employed family caregivers feel better about playing two or more roles. In addition, based on the data from the America Changing Lives Study, Rozario, Morrow-Howell and Hinterlong (2004) noted that older family caregivers who were employed outside the home or volunteered regularly tended to report better well-being, including self-perception of health, a relative lack of depressive symptoms, and the ability to function. The productive role and the social network associated with employment and volunteering are assumed to be responsible for these positive results. This conclusion is also supported by Hansen and Slagsvold (2015), whose study of Norwegian caregivers noted that caregivers could benefit from full-time employment. They pointed out that the time spent in work provides caregivers with some type of respite or distraction from the caregiving issues, as well as social and psychological resources associated with the work environment.

Other studies, however, have reported that for family caregivers, employment status does not present additional mental health risks or benefits (Cannuscio et al., 2004, Yang et al., 2012), or that emotional health does not differ significantly between employed family caregivers and non-caregivers (Lee et al., 2001). For example, Dautzenberg and colleagues (1999) have noted in their study that after the middle-aged daughters became caregivers to their parents, their role strain was more likely to be determined by their own health condition, the quality of their relationship with their parents, and support from siblings, rather than employment or working hours. In addition, Reid and colleagues (2010) identified the effects of employment status and work interference on the caregiving burden and caregiver well-being. They stated that employed family caregivers who reported work interruptions from family caregiving experienced more caregiving burden and lower levels of self-esteem and well-being, while employment status did not account for differences related to caregiving outcomes.

Available literature on the relationship between employment and mental health among family caregivers suggests that the effects of employment vary. The inconsistent conclusions from previous studies may result from variations in study locations, target groups, and sample sizes, and different perspectives examining the interaction between employment and family caregiving. These differences further illustrate the need to examine the role of employment in the context of family caregiving from different perspectives, such as employment adjustment, which is the focus of this study.

Employment Adjustment among Family Caregivers. Caregivers who are employed make adjustments to their paid job or career in order to meet caregiving demands, and these changes in employment, also known as work accommodation, work compromise, job outcomes, employment adaptation, or employment change, are common among employed family caregivers (DeRigne & Porterfield, 2017; Franklin, Ames, & King, 1994; Lahaie et al., 2013; Stone & Short, 1990). Employment adjustment includes changing work schedules or reducing work hours, shifting to part-time employment, using vacation time for caregiving, taking more days off with or without pay, and considering quitting, or quitting altogether. (Evandrou & Glaser, 2003; Scharlach, 1989; Schneider, Trukeschitz, Mühlmann, & Ponocny, 2013).

In Canada, it is estimated that more than 25% of family caregivers in Canada make employment adjustments, including quitting their job, retiring early, and changing work roles and schedules (Duxbury et al., 2009) to accommodate caregiving. In addition, about 15% of employed family caregivers have reduced working hours, and about 10% of them turn down job promotions (Sinha, 2013). In the United States, for example, about 69% of employed family caregivers report rescheduling or decreasing working hours or taking unpaid leave to meet caregiving responsibilities (Family Caregiver Alliance, 2016a). Further, between 5% and 29% of employed family caregivers have turned down promotion or training opportunities (National Alliance for Caregiving, 2009; Pitsenberger, 2006), which further affects their professional opportunities and employment benefits. Similarly, Dautzenberg and colleagues (2000) have pointed out that both part-time and full-time employed family caregivers found it difficult to balance work responsibility and parent care, and as a consequence, they would use vacation days to work, adjust their working schedule, or take unpaid leave to take care of their parents.

Impact of Employment Adjustment on Mental Health. Employed family caregivers often experience additional consequences associated with employment adjustment. Previous studies on the impact of employment adjustment tend to focus on the loss or minimization of career development and the onset of financial hardship (Evandrou & Glaser, 2003; Schofield, Shrestha, & Callander, 2013; Wakabayashi & Donato, 2005). For example, a national American survey (Wakabayashi & Donato, 2005) found that employed women become family caregivers may lose up to 25% of their average annual income.

The study on the mental health consequences of employment adjustment is rare, but is gaining increased attention. For example, Szinovacz and Davey (2004) noticed that women retirees would report more depressive symptoms when they perceived their early retirement is forced by the need to support their spouse due to disability or increasing ADLs limitation. Also, Bourke, Pajo, and Lewis (2010), interviewed female small business owners who were also taking responsibility for aging family members. They found that those participants tend to limit business growth to gain more flexibility and time to support their family members, although such decisions led to certain negative emotional consequences. A recent study based on a national survey in the United States (Longacre, Valdmanis, Handorf, & Fang, 2016), noted that previous changes in work status and work interference were both positively associated with family caregivers' emotional stress. Due to the limited available knowledge, Longacre and colleagues (2016) also recommended more research on the impact of change in work status on caregivers' stress levels.

Though there are quite accumulated studies on employment and mental health of family caregivers, research on the relationship between employment adjustment and mental health is rare. Therefore, the current study intends to examine the association between employment adjustment and mental health outcomes of employed family caregivers to provide further understanding of family caregivers' mental health in the circumstance of working and caregiving simultaneously.

Caregiving Context and Employment Adjustment. There is an important body of literature indicating that family caregivers with different socioeconomic backgrounds would experience different levels of employment adjustment. Generally, female family caregivers are more easily influenced by their caregiving responsibilities to make adjustments in their working arrangements or participation, such as to take on less demanding jobs (Family Caregiver Alliance, 2016a; Hirschfeld & Wikler, 2003; Lahaie et al., 2013; Lee & Tang, 2015). Also, family caregivers of different ages experience different effects from caregiving (Bolin, Lindgren, Lundborg, 2008; Lee & Gramotnev, 2007). Some study found that female caregivers older than 55 tend to stop working than younger caregivers (Henz, 2004). The education level of family caregivers is also an important indicator of employment adjustment, and caregivers with higher levels of education are less likely to reduce working hours, stop working or take less demanding jobs as a consequence of caregiving (Lahaie et al., 2013; Masuy, 2009). What's more, marital status has impact on family caregivers' employment adjustment, and that married family caregivers tend to reduce working hours or choose to work in part-time jobs (Berecki-Gisolf, Lucke, Hockey, & Dobson, 2008; Jacobs, Laporte, Houtven, & Coyte, 2014). In addition, employment adjustment relating to caregiving is also correlated with other factors, including ethnicity (Covinsky et al., 2001), caregivers' income management capability (Berecki-Gisolf et al., 2008), as well as a group of factors associated with caregiving tasks and intensity levels is care receivers' ADLs and IADLs needs in daily life, health conditions, and impairment levels (Covinsky et al., 2001; Gottlieb, Kelloway, & Fraboni, 1994).

2.2.2 Role Conflict in Family Caregiving Context

Individuals may experience work-family role conflict when the demands or pressures from their work and/or family domains are mutually incompatible (Greenhaus & Beutell, 1985;

Kahn, Wolfe, Quinn, Snoek, & Rosenenthal, 1964). Work-family role conflict is bidirectional, originating from work, family, or both (Somech & Drach-Zahavy, 2012). When work activities interfere with family activities, work-to-family role conflict occurs; when family activities interfere with work activities, family-to-work role conflict occurs. Work-family role conflict can further be categorized from different perspectives, including time-based, strain-based, and behaviour-based conflict (Greenhaus & Beutell, 1985; Kinnunen, Feldt, Geurts, & Pulkkinen, 2006), and these types of conflict may play different roles in caregivers' responses to varying coping strategies (Andreassi, 2011). Various studies have considered work-family role conflict as an integrative general concept that expresses the feeling of pressure (Jansen, Kant, Kristensen, & Nijhuis, 2003; Jansen, Kant, Nijhuis, Swaen, & Kristensen, 2004; Li, Shaffer, & Bagger, 2015). Those studies may use different measurements or scales, such as the 5-item scale introduced by Netemeyer, Boles, and McMurrian (1996) or the 24-item scale used by Kopelman, Greenhaus and Connolly (1983). However, all of these scales attempt to quantify the core meaning of work-family role conflict. Jansen and colleagues (2003), on the other hand, ask one question, "Are you able to adequately combine work and family life?"

Based on the 2008 National Study of the Changing Workforce (NSCW), Brown and Pitt-Catsouphes (2016) identified the mediating function of work-family role conflict between workplace characteristics, such as work flexibility and access to flexible work options, and caregiver stress. More recently, a study of 880 employees by Gaugler et al. (2018) also identified the mediating role of work-family conflict in the relationship between caregiver burden and physical and mental health outcomes among employed family caregivers. Therefore, recognizing the mediating function of role conflict provides a better understanding of the effects of family caregiving on family caregivers' health and well-being outcomes. Although relatively few studies have established the relationship between employment adjustments and employed family caregivers' mental health consequences through work-family role conflict, some correlation among these factors has been observed.

Impact of Role Conflict on Mental Health. The negative impact of role conflict on mental health is well established (Allen & Armstrong, 2006; Allen, Herst, Brusk, & Sutton, 2000; Fekete et al., 2018; Greenhaus & Beutell, 1985). For example, based on data from the Swiss Household Panel, Hämmig and Bauer (2009) reported that participants who reported higher work-family role conflict tend to experience significantly higher levels of negative emotion and depression, low energy, reduced optimism, and sleep disorders, compared to those who were without work-family role conflict. Work-family role conflict was associated with other aspects of mental health: it was negatively related to life satisfaction and positively associated with emotional exhaustion (Frone, 2000; Zhang, Griffeth, & Fried, 2011). For example, Fekete and colleagues (2018) indicated that when individuals experience role conflict, they would adopt adverse health behaviours, including poor nutrition and increased alcohol intake, which would further lead to increased psychobiological stress, negative emotions, and other negative outcomes.

Several studies have further examined the mediating function of work-family role conflict related to employed family caregivers' mental health. Based on the 2011 Canadian Work Stress and Health study, Glavin and Peters (2015) explored the effects of work-family role conflict on the association between caregiving frequency and mental health (represented by psychological distress). They tested the mediating function of family-to-work role conflict, work-to-family role conflict, and both directions separately, concluding that work-family conflict fully mediates the impact of caregiving frequency on psychological distress for males, and partially for female employed family caregivers. Another study conducted in Taiwan (Wang, Shyu, Tsai, Yang, & Yao, 2013) also determined that role conflict offers a better explanation of the association between caregiving and mental health outcomes. In their study of 176 dementia caregivers, Wang and colleagues (2013) pointed out that the impact of caregiving demands on caregivers' mental health was dependent on the joint function of work-caregiving conflict and preparedness to be caregivers. More specifically, employed family caregivers with low work-caregiving conflict and high levels of preparedness tended to have lower levels of role strain and maintained their mental health even when caregiving demands increased.

Although the available evidence connecting employment adjustment and mental health is scarce, the effect of role conflict is useful in providing further insight into understanding the relationship between employment adjustment and family caregivers' mental health.

2.2.3 Workplace Support in Family Caregiving Context

Workplace Support for Family Caregivers. Employed family caregivers may receive workplace support for their family caregiving roles and responsibilities. Although many of existing workplace policies that support family responsibilities have been based on employees with children, changes have occurred with the understanding of the shift of caregiving roles to supporting aging people or dying relatives (Vuksan, Williams, & Crooks, 2012). At least three types of work-related support are available to employed family caregivers. The first type is national policies that help family caregivers balance work and family responsibilities. In Canada, the Employment Insurance program provides employed family caregivers with 26 weeks of Compassionate Care Benefits to provide care to family members who are gravely ill or at risk of death (Government of Canada, 2017a). This important policy provides family caregivers with job protection and income replacement (Feinberg & AARP Public Policy Institute, 2018; Lilly, 2011). In European countries, different forms of national policy or acts have been developed to support employed family caregivers. For example, in England and the Netherlands, employees have the legal right to request flexible working arrangements or schedules due to caregiving for adult family members (Arksey & Morée, 2008). In addition, broader provincial policies also support caregivers, with several Canadian provinces providing unpaid leave for family caregivers when they need to take entire days off to care for family members (Carstairs & Keon, 2009; Government of Ontario, 2018).

The second type of support is the employer-based program, which directly provides services and help to employees with senior care responsibilities. Beginning in the 1980s, some companies in the United States have provided their employees with various resources including referrals to contracted caring centres for aging people (Barr, Johnson, & Warshaw, 1992). For example, commercial service providers deliver Employer-Sponsored Senior Care Programs under contracts with employers, enabling employed family caregivers to seek help in the form of senior care counseling, resource and referral services, care management services, and on-site adult day care facilities (Dembe & Partridge, 2011).

The third type of support includes caregiver-friendly policies such as flexible work arrangements and family leave (Pavalko & Henderson, 2006; Williams et al., 2017). Such caregiver-friendly policies allow for flexible work schedules, transition to part-time work, unpaid leave, home office, work sharing with co-workers, and telecommunication (Shabo, 2015; Williams et al., 2017). Based on interviews with approximately 300 employers in Canada, Lero and associates (2012) reported that many Canadian employers are providing a range of support for their employees, such as flexible starting and quitting times, work at home or off-site, part-time work options, and extended career breaks. In addition, some large companies in Canada offer up to 80 hours for employees to allow them to care for spouses or aging parents (Mediacorp Canada Inc., 2011).

Workplace Support as Moderator. Several studies have reported that workplace support can moderate the relationship between caregiver stress and employment outcomes by decreasing stress for employed family caregivers caused by work interruption (Kim et al., 2013). For instance, a survey of employer-based program service users outlined positive and beneficial effects such as preventing job absences and enhancing the ability to work productively while maintaining a good family life at home (Dembe, Partridge, Dugan, & Piktialis, 2011). Additionally, flexible work arrangements are positively associated with lower levels of work-family role conflict (Brown & Pitt-Catouphes, 2013; 2016) and higher levels of work-family balance (Duncan & Pettigrew, 2012).

More specifically, the accumulative evidence demonstrates the significant impact of workplace support on employed family caregivers' work-family role conflict (Galinsky, Sakai, & Wigton, 2011). According to Somech and Drach-Zahavy (2012), workplace support is a critical factor in mitigating work-family conflict for employed family caregivers, particularly when caregivers lack personal or informal resources. Brown and Pitt-Catsouphes (2016) also pointed out that employed family caregivers' perceived flexibility control and access to flexible work options were significantly negatively associated with work-family role conflict. Their results echo the findings reported in the Family Supportive Organization Perceptions (FSOP) study (Wayne, Casper, Matthews, & Allen, 2013). Among the 1044 participants, the authors found a significant negative association between FSOP and work-family role conflict. Bakas and associates (2014) reported similar findings based on an intervention seeking to improve schedule control and supervisor support for parents and adult caregivers. The intervention effect on family-to-work role conflict experienced by employed family caregivers is statistically significant. In addition, employed family caregivers can also benefit from healthy interactions with supervisors and co-workers. More evidence has shown that family supportive supervision and active collaboration with co-workers/supervisors are negatively associated with work-family role conflict (Lapierre & Allen, 2006; Thompson & Prottas, 2005).

Workplace support also directly influences the association between caregiving and mental health outcomes. Zacher and Schulz (2014) studied Perceived Organizational Eldercare Support (POES) in Germany, and found a significant interaction between POES and caregiving demands on perceived strains manifested as psychosomatic complaints. The association between caregiving demands and strain is significantly positive for employees with low POES, and non-significant for employees with high POES. Another study conducted in Japan (Honda et al., 2014) also found that the risk of depression is significantly increased among employed family caregivers with limited contact with their supervisor or co-workers, compared to those who enjoy more conversations. Conversation and communication in the workplace are sources of workplace support, which further plays a critical role in the mitigation of depression in a caregiving context.

Workplace support can buffer the negative impact of work-family role conflict on the mental health of employed family caregivers. Based on Phase II of the National Survey of Midlife Development in the United States, Li and associates (2015) reported that the interaction between family-to-work role conflict and the perceived supervisor support is significantly correlated to depression, and marginally significantly predicting life satisfaction among caregivers for people with disabilities. More specifically, family-to-work role conflict contributed to decreased life satisfaction for participants who report low levels of supervisor support, and participants with high family-to-work role conflict and low levels of supervisor support reported the most depressive symptoms. Similar results have been identified in other settings. Edwards, Zarit, Stephens, and Townsend (2002) concluded that employed family caregivers with higher levels of role conflict would experience risk in severe depression when lack positive work experience. Lingard and Francis (2006) identified the moderating function of workplace support in the association between work-family role conflict and emotional exhaustion and burnout among construction professionals. They also reported that perceived organizational support and practical support from both supervisors and co-workers could serve as protective buffers against the negative association between work-family role conflict and emotional exhaustion.

Based on the available evidence, the moderating effect of workplace support is manifest in the direct relationship between family caregiving and mental health outcomes, as well as in their indirect relationship through role conflict. The available evidences provide useful reference and insight for current study to examine the moderating effect of workplace support between employment adjustment and mental health outcomes directly, or indirectly through role conflict.

2.2.4 Limitations of the Current Literature

Although many previous studies have examined the experiences of employed family caregiver, gaps remain in the current literature. First, findings on the relationship between caregivers' multiple roles and mental health status have been mixed, with valid findings supporting both role strain and role enforcement perspectives. Second, family caregivers make employment adjustment in order to meet the needs and demands of caregiving tasks. However, most available studies focus on specific employment status rather than the wider processes and contexts of employment adjustment for family caregivers. Third, the financial consequences of employment adjustment have been widely studied and documented, with limited attention to other employment adjustment consequences, including mental health. Fourth, the role conflict has been widely studied as mediator to understand the relationship between employment and caregiving outcomes, but the mediating effect of role conflict between employment adjustment and mental health outcomes of family caregivers is understudied. Finally, available resources and support are critical in helping caregivers cope with caregiving tasks and preventing negative mental health outcomes. However, most studies on the function of workplace support and resources have concentrated more on parenting than on caregiving for aging family members. Therefore, it is important to examine the mental health of employed family caregivers from the perspective of employment adjustment, and assess the effect of role conflict and workplace support in understanding the relationship between employment adjustment and mental health outcomes of family caregivers.

2.3 Theoretical Framework and Hypotheses

This study examines the association between employment adjustment and the mental health of employed family caregivers by drawing on role theory, and stress process model. Based on the assumptions of applied theories and the available literature, the proposed theoretical model will address the relationships between employment adjustment and mental health outcomes, with considering the role conflict and workplace support. The data analysis and interpretation of these relationships will be guided by a moderated-mediation relationship, illustrated in Figure 1, which considers the moderating effect of workplace support and the mediating effect of family-to-work role conflict between employment adjustment and mental health outcomes.

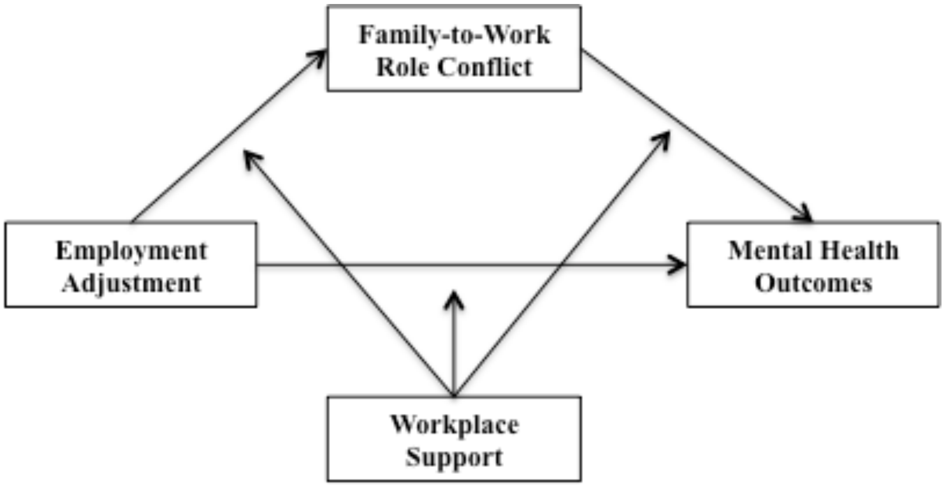


Figure 1 Moderated-Mediation Relationship between Employment Adjustment and Mental Health

Based on the review of previous literature and the theoretical approaches described above, this study proposes the following hypotheses to answer the research questions:

Research question 1: Is employment adjustment associated with the mental health of employed family caregivers?

Hypothesis 1: *Employment adjustment is negatively associated with participants' mental health, such that participants with more employment adjustment would report worse mental health conditions.*

Research question 2: Is perceived family-to-work role conflict a mediator between employment adjustment and mental health outcomes of participants?

Hypothesis 2: *Employment adjustment is positively correlated to perceived family-to-work role conflict, such that more employment adjustment is associated with higher levels of family-to-work role conflict.*

Hypothesis 3: *Family-to-work role conflict is negatively associated with mental health, such that participants with higher levels of family-to-work role conflict would experience worse mental health outcomes.*

Hypothesis 4: *Family-to-work role conflict is a mediator for employment adjustment and mental health, as the relationship between employment adjustment and mental health is partially or fully mediated by perceived family-to-work role conflict.*

Research question 3: Does workplace support moderate the relationship between employment adjustment and mental health?

Hypothesis 5: *Workplace support would moderate the relationship between employment adjustment and family-to-work role conflict, such that family caregivers with workplace support would report lower levels of family-to-work role conflict in the circumstances of employment adjustment.*

Hypothesis 6: *Workplace support would moderate the relationship between family-to-work role conflict and mental health, such that the negative association between family-to-work role conflict and mental health would weaken when family caregivers have workplace support.*

Hypothesis 7: *The relationship between employment adjustment and mental health is moderated by workplace support, such that family caregivers with workplace support would report better mental health in the circumstances of employment adjustment.*

Chapter Three: Methodology

3.1 Research Design

The current study was quantitative research based on secondary data of the Public Use Microdata File of the Canada General Social Survey (GSS) Cycle 26: Caregiving and Care Receiving (Statistics Canada, 2017b). To answer the research questions, and to test the proposed hypotheses, a series of statistical analyses were conducted.

3.1.1 Secondary Data Analysis as Research Method

Secondary data analysis is defined as “the method of using preexisting data in a different way or to answer a different research question than that intended by those who collected the data” (Schutt, 2012, p. 414). It is a well-established and widely used method for social science research (Cheng & Phillips, 2014; George & Landerman, 1983; Hofferth, 2005). Some researchers see secondary data analysis as useful in exploring new ideas, while others regard it as helpful in using newer and better data analysis methods and techniques (Glass, 1976; Smith, 2008).

There are many advantages of secondary data analysis based on preexisting survey data sets in social sciences. First, researchers can benefit from the large sample size and the high quality of the existing data sets. Especially, large-scale or population-based data sets tend to have the capability of generating considerable representativeness by covering a large sample at the national level (Dunn et al., 2015). Second, nationally representative data sets compiled by professional social scientists at national research institutes generally adopted sophisticated sampling strategies, which leads to a higher level of generalizability than other local surveys (Smith, 2008). Third, due to the large sample size of some secondary data sets, researchers can study different groups within the same population. Canada has populations with diverse ethnicities, family structures, cultural or religious beliefs, and socioeconomic status. To examine some national or worldwide social or health issues among different populations, local surveys may not be an appropriate choice.

The prevalence of using secondary data in social work research has changed dramatically in recent decades, and social work research has been increasingly reliant on secondary data analysis (Sales, Fevola, & Lichtenwalter, 2006; Vartaniam, 2011). As reported by Vartaniam (2011), only 6 out of 32 papers published in the journal *Social Service Review* in 1980 were based on secondary data analysis, while in 2007, 18 out of 22 papers published in this journal used secondary data sets.

3.1.2 The Selected Secondary Data Set

In this study, the data file of the GSS 26: Caregiving and Care Receiving was used. For GSS 26, the survey was conducted by Statistics Canada between March 2012 and January 2013, targeting Canadians aged 15 years and older who were providing care to family members or receiving family care and living in private dwellings in Canada's ten provinces. According to Statistics Canada (2013), the stratified random sampling method was used, and the ten provinces of the target population are divided into strata (i.e., geographic area). Thus, the stratification was conducted at the Province/ Census Metropolitan Area level, and resulted in a total of 27 strata. Within each stratum, the Random Digit Dialing technique was used to select the phone numbers to contact households for the survey, and the Computer Assisted Telephone Interviewing was used to collect the data. As a result, 23,093 participants completed the questionnaire, yielding to a response rate of 65.7%.

The GSS 26 focuses on the situation of Canadians who receive support due to long-term health conditions, or aging-related disability and problems, as well as those who provide care to family members or friends with those conditions (Statistics Canada, 2013). The GSS 26 survey contains seven main sections, including the basic participant information, Care Receiving, Caregiving, Education/Employment and Consequences of Caregiving, Housing, Health and Well-being, and Descriptive Variables (e.g., birthplace, immigration status, and religion). In addition, within the Caregiving section, the survey collected information about caregiving, such as the types of care provided, available support, and consequences of caregiving. Also, within the Health and Well-being section, the information related to the caregivers' health and well-being was collected, including self-rated health condition (physical health and mental health), perceived life stress and life satisfaction, and so on. Furthermore, in the Education/Employment and Consequences of Caregiving section, the information related to the availability of workplace support (e.g., flexible work arrangement), and the participants' employment adjustment (e.g., work leave and reduce working hours) due to their family caregiving duties were collected. Therefore, the selected dataset perfectly fits with the needs and purposes of the current study to understand the family caregivers' experiences in the context of working and family caregiving simultaneously.

Furthermore, in the survey of GSS 26, there are questions related to the main activities of participants in the past 12 months, and questions related to their employment status and the number of working hours per week. Therefore, based on these questions, the current study was able to select the participants who have an employee role outside of the home. In addition, the current study is specifically interested in the experience of family caregiving to the aging population in Canada, that is those who are aged 65 years and older. Fortunately, the GSS 26 also collected information on the participants' care receivers, including their age. Therefore, the

GSS 26 can help us identify a group of participants that fully meet the purpose of the current study, that is employed family caregivers providing care to aging people.

To sum up, the unit of analysis in the current study is an individual participant with a paid job and younger than the retirement age (65 years old) who provides care to aging family members or friends. For data analysis purposes, the study population extracted from the GSS 26 data set was identified based on the following criteria: 1) primary care receiver is an adult aged 65 and older; 2) caregivers provided at least one hour of care per week to their primary care receivers in last 12 months; 3) the caregiver is still supporting the care receiver during the survey; 4) the caregiver's main activity in the last 12 months was as an employed worker; and 5) the caregiver is less than 65 years old when participating in the survey. Based on these selection criteria, a total of 1,696 participants were selected for data analysis.

3.2 Conceptualization and Selection of Variables

Based on the research questions, the proposed hypotheses, and the theoretical moderated-mediation model, a group of relevant variables was selected from the GSS 26 data set to examine the hypothesized relationships and association among different life aspects of employed family caregivers.

3.2.1 Dependent Variable

The current study focuses on the mental health status of employed family caregivers. Mental health is an umbrella terminology, which contains various aspects. The WHO (2005) defined mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (para. 2). Also, positive mental health includes the presence of emotional, psychological and social well-being (Keyes, 2002; Lamers, Westerhof, Bohlmeijer, Klooster, Keyes, 2011). In the existing literature on individuals' mental health condition, several indicators have been identified to examine people' mental health condition, including self-rated mental health, psychological symptoms, distress, depression, anxiety, stress and others (Ahn, Hochhalter, Moudouni, Smith, & Ory, 2012; Chun et al., 2007; Knight, Silverstein, McCallum, & Fox, 2000).

In the data set of GSS 26, relevant variables include self-rated mental health, psychological symptoms, life stress, and caregiving stress. Self-rated mental health was measured by asking participants to describe their mental health as "excellent", "very good", "good", "fair", and "poor", and within which, 1 stands for "excellent" and 5 stands for "poor". This single item measure has been proven to be as reliable and valid as other multiple-item scales for all age groups, because (1) this question is un-ambiguous and specific, which can facilitate interpretation with limited variation, and (2) individuals have an immediate experience and relatively stable judgment of their own condition (Lundberg & Manderbacka, 1996). In addition, in recent years, this single item measure of self-rated mental health is increasingly used in health research surveys. Ahmad, Jhajj, Stewart, Burghardt and Bierman (2014) conducted a review on 57 studies using this scale, and found that this single item scale is significantly related to mental health indicators (e.g., mood and anxiety disorders) and other mental health scales (e.g., DSM–IV psychiatric disorders).

For self-reported psychological symptoms, participants were asked to indicate whether they have experienced a series of ten symptoms, including feeling tired, worried or anxious, overwhelmed, lonely or isolated, short-tempered or irritable, resentful, depressed, experiencing loss of appetite or disturbed sleep, and other symptoms in the past 12 months due to caregiving responsibilities. This 10-item scale has a high level of internal consistency with the Cronbach's

Alpha at 0.827. The current study used an aggregated variable based on these ten items, indicating the actual number of psychological symptoms experienced by participants. Therefore, the newly created variable will range from 0 to 10, and the higher the number means respondents experience more psychological symptoms and have worse psychological wellness. Inviting participants to indicate whether they experience any of symptoms to reflect their psychological wellness is a common practice in studies examining psychological well-being (Gaugler, Eppinger, King, Sandberg, & Regine, 2013), and also in family caregiving studies (Kelly, Whitley, & Campos, 2011; Monin, Schulz, & Kershaw, 2013).

For life stress, participants were asked: “what amount of stress is in your life most days”. A 5-point scale was provided to capture participants’ stress level from “not at all stressful”, “not very stressful”, “a bit stressful”, “quite a bit stress”, and “extremely stressful” (1 stands for “not at all stressful” and 5 stands for the “extremely stressful”). For caregiving stress, participants were asked to answer the question “how stressful have your caregiving responsibilities been during the past 12 months” by indicating their caregiving stress level on a 4-point scale, from “very stressful”, “stressful”, “somewhat stressful”, and “not at all stressful”. In this scale, originally 1 stands for “very stressful”, and 4 stands for “not at all stressful”. During the data analysis, the sequence was reversed to make it consistent with other three mental health indicators. The Mental Health Commission of Canada (2015) suggested that experiencing a high level of stress associated with family caregiving is one significant indicator of the mental health of Canadians in all age groups. In addition, in family caregiving field, some studies focus on caregiving responsibility and task-related stress (Kim, Loscalzo, Welllisch, & Spillers, 2006), some focus on global stress (Brown & Pitt-Catsouphes, 2015), and some include both of them (Fredman, Cauley, & Hochberg, 2010).

3.2.2 Independent Variable

The independent variable of the current study is employment adjustment. In the original data set, participants were asked to indicate “yes” or “no” to a series of questions about several types of employment adjustment due to family caregiving responsibilities, including reduction in regular weekly hours of work, taking one or more days off, quitting a job, turning down a job offer or promotion, and taking a less demanding job. A new variable was calculated based on these five types of employment adjustments with scores ranging from 0 to 5, indicating the amount of employment adjustment that participants have made during the 12 months before the survey.

3.2.3 Mediating Variable

The role conflict is the mediating variable of the current study, which focuses on the family-to-work role conflict. In the GSS 26 data set, the family-to-work role conflict is measured by asking participants to answer the question “how often has it been difficult to concentrate on work because of family responsibilities in the past 12 months” on a 4-point scale from “all of the time”, “most of the time”, “sometimes”, to “never”. Previous studies have demonstrated that a single question with subjective terms similar to the one listed in the current study can capture the meaning of work-family role conflict (Coverman, 1989; Jansen et al., 2003). In addition, the sequence of the 4-point scale was reversely coded, so 1 stands for “never” and 4 stands for “most of the time”.

3.2.4 Moderating Variable

The available workplace support is the moderating variable of this study. More specifically, five different types of available workplace support are measured in the GSS 26 data set. These workplace support, indicated by “yes” or “no”, are: if they have a flexible schedule that allows them to choose the time they begin and end their work day, if their employer provides them with the option to work part-time, if their employer allows them to take leave to care for spouse or family members, if their employer allows them to take extended leave for personal reasons, and if their employer provides them with the option to telework. An aggregated variable based on those five types of workplace support was created, and the aggregated score is categorized as “0” indicating no any workplace support is available, and “1” indicating workplace support is available.

3.2.5 Demographic and Socioeconomic Variables

This study controlled participants’ demographic and socioeconomic backgrounds, because previous research has consistently found that demographic background and socioeconomic status are associated with family caregiver’s mental health (Szaflarski, 2001; Taylor & Seeman, 1999). In this study, relevant variables include age, gender, marital status, education attainment, personal income, working hours per week, country of birth, and religious beliefs. Originally, the age of participants was measured according to age groups: “15 to 24 years old”, “25 to 34”, “35 to 44”, “45 to 54”, “55 to 64”, “65 to 74”, and “75 years and over”. For the purpose of the current study, participants who aged 65 and older will not be included, as 65 years old is the typical age for retirement (Government of Canada, 2017b). Therefore, only participants between 15 to 64 years old were included in the analysis. In addition, the age was re-grouped into three levels: “15 to 29 years old”, “30 to 44 years old”, and “45 to 64 years old”.

Gender was categorized as either male or female, and both genders were included in the data analysis. Marital status was originally measured in six different categories, including “married”, “living common-law”, “widowed”, “separated”, “divorced”, and “single or never married”. As a common practice in family caregiving and health study, these six categories were combined into two groups of marital status, “married/living common-law” and “not married”. Participants’ highest education attainment was originally separated into 7 levels: “less than high school diploma/ its equivalent”, “high school diploma/high school equivalency certificate”, “trade certificate or diploma”, “college/CEGEP/other non-university certificate or diploma”, “university certificate/diploma below the bachelor's level”, “bachelor's degree (e.g., b.a./b.sc./ll.b.)”, and “university certificate/diploma/degree above the bachelor's”. In the current study, the education level was regrouped into four levels based on the Statistics Canada (2015), including “less than high school diploma”, “high school diploma and its equivalent”, “college certificate or diploma”, and “university degrees”.

Annual personal income of participants was measured with 12 levels: “no income or loss”, “less than $5,000”, “$5,000 to $9,999”, “$10,000 to $14,999”, “15,000 to $19,999”, “$20,000 to $29,999” to “$80,000 to $99,999” and “$100,000 or more”. Based on the average individual income of Canadians in 2012, the income was recoded into three levels for data analysis: “less than $40,000”, “$40,000 to less than $60,000”, and “more than $60,000”. In addition, the working hours per week for participants were measured by the actual number of hours participants usually work at her/his job, ranging from 0.1 hour to 100 hours and over. In some cases, participants have more than one job. Therefore, all the working hours on all job positions were summed up to form one single variable indicating the working hours per week.

Participants’ information related to country of birth was measured by two categories, “Canada” and “country outside Canada”. Immigration status is one important factor related to family caregivers’ experience and their mental health consequences (Soskolne, Halevy-Levin, & Cohen, 2007), and many studies have reported the different mental health outcomes between the immigration and non-immigration family caregivers in North America (Chun et al., 2007; Clay et al., 2008), indicating non-immigrants tend to experience worse mental health outcomes due to family caregiving.

Participants' religion was measured by 17 categories in the data set, covering "no religion", "Roman Catholic", "United Church", "Baptist", "Jewish", "Islam" and so on. For data analysis, these 17 categories were grouped into three categories, including "participant without religious beliefs", "with Christian beliefs", and "other religious beliefs". As indicated in previous studies (Hebert, Dang, & Schulz, 2007; Herrera, Lee, Nanyonjo, Laufman, & Torres-Vigil, 2009), religious related beliefs and coping strategies are closely related to family caregivers' mental health outcomes. For example, Hebert and colleagues (2007) found that the frequency of attendance at religious services and prayer are associated with less depressive symptoms. Therefore, it is necessary to control participants' religion in the data analysis.

3.2.6 Other Controlling Variables

Three groups of relevant variables were included as controlling variables: one is the care receivers' demographic and health information, the second group is available and/or perceived social support for participants, and the last group is the types of support provided by participants to care receivers and the amount of time spent on those tasks.

The variables related to care receivers include age, gender, health condition, and whether receiving professional care, as well as the relationship with participants, and the living arrangement of participants. For this study, only the care receivers age 65 years and older were included, and the original measurement was "65 to 69 years old", "70 to 74", "75 to 79", "80 to 84", "till 95 to 99" and "100 and over". For data analysis, the age of primary care receivers was re-coded into three levels:"65 to 74 years old", "75 to 84 years old" and "85 years old and over".

The gender of care receivers was categorized into “male” and “female”, and the current study followed the same measurement.

When it comes to the health condition of primary care receivers, the participants were asked about the “main health condition or problem for which respondent's primary care receiver received help”, and 16 different health conditions are presented, such as arthritis (rheumatoid arthritis/osteoarthritis/lupus), osteoporosis, cardiovascular disease (angina/heart attack/stroke), kidney disease, asthma, chronic bronchitis/emphysema/chronic obstructive pulmonary disease, diabetes, back problems, cancer, mental illness (depression/bipolar disorder/mania/schizophrenia), Alzheimer's disease or dementia, all other neurological diseases (Parkinson's disease, etc.) and so on. Based on the nature of those health conditions, four main categories were grouped to indicate the primary care receivers’ health condition, which are “aging and frailty”, “chronic health issues or disability”, “mental or neurological health issues”, and “others”. The information related to the professional care of care receivers was also collected from participants by inviting them to answer the question “has your primary care receiver received help from professionals in the past 12 months”. The measurement is “Yes” or “No” to indicate whether the primary care receiver is using professional care or not.

Originally, the relation between participants and care receivers was measured by 25 categories, such as spouses (or ex-spouse), children (or in law), parents (or in law), grandchildren, grandparents, as well as siblings (or in law), and friends and neighbors and so on. For the purpose of this study, these 25 categories were regrouped into three categories, “parents”, “other family members” and “other individuals (e.g., friends)”. The living arrangement of participants and their care receivers were measured by seven categories, covering “in the same household”, “in the same building”, “less than 10 minutes by car”, “10 minutes to less than 30 minutes by car”, “30 minutes to less than 1 hour by car”, “1 hour to less than 3 hours by car”, and “3 hours or more by car”. In the data analysis, these categories were regrouped into two types of living arrangement, “living together in the same household”, and “not living together”.

The available and/or perceived social support for participants from family, community or formal organization were included in the data analysis to rule out the potential impact from those types of support. For support from family/community level, participants were invited to indicate “Yes” or “No” to 5 questions, including “to accommodate your caregiving duties, has your spouse/partner modified their life/work arrangements”, “to accommodate your caregiving duties, have your children provided you with help”, “to accommodate your caregiving duties, have your extended family members provided help”, “to accommodate your caregiving duties, have your close friends provided you with help” and “to accommodate your caregiving duties, have your community provided you with help”. These five items were calculated to form a new variable to indicate the informal support that participants receive from family and community. This variable ranges from 0 to 5, and the higher number indicates that more informal support. In addition, three more questions indicating the availability and utilization of formal support from social service agencies and government were identified. The participants also answered questions: “to help you with caregiving, have you had occasional relief or respite care”, “to help you with caregiving, have you received money from government programs”, and “have you received any federal tax credits for which caregivers are eligible”. In the same vein just as informal support, these three items were aggregated into a new variable of formal support, which ranges from 0 to 3.

The different types of care or support provided by participants, along with the time they spent on those tasks every week, indicate the intensity of caregiving provided in the caregiving context. The existing literature already concluded that caregiving intensity plays a key role in caregivers' mental health consequences (Sörensen & Pinquart, 2005). A total of seven questions regarding to seven types of care or support were asked in the survey, including "transportation", "meal preparation and cleaning", "house maintenance or outdoor work", "personal care", "medical treatment", "scheduling care related tasks", and "banking and/or paying bills". Respondents were asked to answer "Yes" or "No" to indicate whether they have provided each type of care to the care receivers, and an aggregated variable was computed based on those seven questions. This variable (ranging from 1 to 7) indicates the total types of support provided by participants, which reflects the caregiving tasks, and also the level of support needed by care receivers. In the survey, following the questions related to the types of support, another question regarding to amount of time spent on these tasks was asked. This question is "on average, how much time have you spent helping with these tasks", measuring by 5 levels including "less than 1 hour", "1 to 3 hours", "3-5 hours", "5 to 10 hours", and "10 or more hours". Based on those questions, an aggregated variable (ranging from 1 to 35) indicating the amount of time cost of caregiving for participants was generated for further analysis.

3.3 Data Analysis Procedures

The public used version of GSS 26 data set is available from the University of Calgary library online system, along with the supportive files, including Public use microdata file documentation and user's guide (Catalogue no. 89M0031X) and questionnaire (Catalogue no. 12M0026X), provided by Statistics Canada (2013). Before proceeding to data analysis, a few steps were taken to prepare the raw data for statistical tests. The IBM Statistical Package for the Social Sciences (SPSS) 24 was the main statistical analysis tool in this study.

3.3.1 Data Preparation

Missing data. Missing data is a common issue within survey research (Little, 1988). It is already identified that incomplete data will potentially affect the power and ability to produce knowledge, and make the research process more complex (Barnard & Meng, 1999). Therefore, it is critical to examine the missing data in survey research and address it appropriately. The concern of data quality due to missing data usually focuses on two aspects, including the quantity of missing data and the missingness pattern. For now, quantitative researchers or statistical data analysts still have not come to a consensus on the level of the proportion of missing data or unresponsive data that can be problematic (Schlomer, Bauman, & Card, 2010). Generally speaking, some researchers suggested that when the percentage of missing data is fewer than about 10%, the data set could be still used with a proper way of dealing with missing data (Bennett, 2001; Schafer, 1990). Enders (2003) also indicated it is common that the missing data reaches 15% to 20% in education and psychological studies.

In addition, some other researchers suggested that the missing data pattern has a greater impact on study results than does the proportion of missing data (Dong & Peng, 2013). Therefore, another critical consideration is the missingness pattern of unresponsive data. In other words, it is important to examine the pattern of missing data to decide whether those unresponsive data is missing randomly or not. The three identified major missingness pattern well documented in previous literature are Missing Completely at Random (MCAR), Missing at Random (MAR), and Missing not at Random (MNAR) (Cole, 2003). MNAR is also described as Nonignorable Missingness (Widaman, 2006), Not Missing At Random (Batista & Monard, 2003), or Informatively Missing (Scheffer, 2002) by other researchers.

These three types of missingness patterns represent different levels of randomness of missing data, as well as the underlying reasons for unresponsive data. More specifically, completely random missing data means there is no identified pattern for missing data, and the missing data is irrelevant to the variables studied in the survey (Schlomer et al., 2010). In such case, the missing data is randomly distributed across all the variables and/or participants. Due to this high level of randomness, lots of researchers suggested that those missing data with MCAR pattern could be ignorable (Batista & Monard, 2003; Scheffer, 2002). While if the missing data is identified as following the MNAR pattern, this means that the pattern of missing data is dependent on some variables of interest in the survey, and/or some systematic, nonrandom factors can be identified to explain the missingness pattern of MNAR (Musil, Warner, Yobas, & Jones, 2002). This type of missingness pattern is most problematic, because the missing data can produce considerable bias in the study findings.

Based on the Missing Value Analysis function in SPSS 24, the Little's test was performed with all the interested variables before recoding (Little, 1988). The result of Little's test indicates that all the missing values are completely random (p=0.757). In addition, most of the interested variables have less than 5% missing value, and only the individual annual income variable has less than 15% missing value (11.7%). Based on the previous discussion, the pattern of missingness of unresponsive data is MCAR, and the proportion of missing data is acceptable. In addition, according to Statistics Canada (2013), due to the nature of the survey, imputation is not appropriate for dealing with missing data in the GSS data file. Therefore, the current study proceeded to data analysis with SPSS 24 without any extra action to the missing data. SPSS 24 supports to conduct complete case analysis without dealing with any missing data, and it is able to proceed with the statistical analysis with the cases containing complete data. This treatment is recommended when the missing data is completely random (Batista & Monard, 2003; Little & Rubin, 1987).

Multicollinearity test. Before performing any data analysis, all the independent variables were analyzed by the multicollinearity tests to rule out the possibility that two variables are highly correlated. Some researchers recommended that when the variation inflation factor (VIF) is less than 4, and the tolerance is more than 0.25, the data analysis can be preceded (Anwar, 2015). Others also suggested less strict cut-off point, such as 10 for VIF, and 0.10 for tolerance (Hair, Black, Babin, & Anderson, 2014; Kutner, Nachtsheim, Neter, & Li, 2005). In the current study, the results showed that all VIF values were less than 4, and all tolerance values were over 0.25, and all the VIF and tolerance meet the strict cut-off criterion. Therefore, multicollinearity is not a possible issue and further concern for this study.

3.3.2 Data Analysis Strategies

Statistical Weight. The GSS survey is using the probability sample, and each participant selected in the sample represents (in addition to himself/herself) a certain amount of other persons not in the survey (Statistics Canada, 2013). And “the number of persons represented by a given respondent is usually known as the weight or weighting factor” (Statistics Canada, 2013, para, 19). With the help of sampling weight, the survey data can represent the entire target population in the ten provinces of Canada. The personal level weight is provided in the data file of GSS 26. Therefore, in this study, the personal level weight was applied in the data analysis. Also, the Statistics Canada (2004) recommended different methods of variance estimation for data with bootstrap weights such as GSS data. Since the data analysis in the current study was performed using SPSS, the instruction provided by Humphrey (n.d.) was followed to create the Syntax for data analysis with personal level weight. During the data analysis, sampling weight was applied to descriptive analysis, and standardized weight was applied to bivariate and multivariate analysis, such as regression.

Data Analysis Steps. Five main steps were carried out to conduct the data analysis. First, descriptive analyses were performed to examine the basic information and characteristics of selected cases, including participants' demographic information, the condition of focal variables (employment adjustment, workplace support, family-to-work role conflict, self-rated mental health, psychological symptoms, life stress and caregiving stress), and variables related to caregiving tasks (caregiving time per week, caregiving tasks, and so on). Mean and standard deviation (SD) results were provided for continuous variables, and percentages were provided for categorical variables. Second, bivariate analyses were conducted on one major variable: gender. Those analyses were able to illustrate whether there is any significant disparity concerning the key variables (employment adjustment, role conflict, and mental health) among the family caregivers based on gender. T-tests and Chi-square tests were used according to the measurement levels of the examined variables.

Third, hierarchical linear regression analyses were conducted to examine the association between employment adjustment and mental health outcomes, including self-rated mental health, psychological symptoms, life stress, and caregiving stress. Therefore, four different regression tests were carried out on the four dependent variables. In order to conduct hierarchical linear regression, three blocks of variables were created and included in the analysis step by step. The first block contains the variable related to employment adjustment, the second block related to the participants' socioeconomic and demographic variables, and the third block includes the variables related to care receivers. While the independent variable is usually added into the model as the last block, Gliner and colleagues (Gliner, Morgan, & Leech, 2011) also indicated that the order to enter the variables into the model can be decided based on the purpose of the study or the particular hypothesis. In the current study, the Research Question 1 intends to test the association between employment adjustment and four mental health indicators. Therefore, by including the employment adjustment into the model first and then adding participants' socioeconomic and demographic information and care receiver related factors can help decide whether the employment adjustment is still associated with mental health indicators or not, when all relevant factors are controlled.

Fourth, mediation analyses were conducted to examine the mediating effect of the family-to-work role conflict in the relationship between employment adjustment and mental health outcomes. As the background, the examination of a mediating variable is to illustrate how the relationship between the independent and the dependent variables can be explained by a third variable (i.e., a mediator) (Fairchild & MacKinnon, 2009; Olsen, 2004). The mediation analyses were performed following the instruction and the SPSS macro PROCESS from Hayes (2013). This macro estimates the 95% confidence interval (CI) of the indirect effect of independent variable on dependent variable through the mediator, and when the CI does not include zero, the mediating effect is significant. In addition, 10,000 bootstrap samples were used to generate the 95% bootstrap CI for the indirect effect.

Fifth, moderated-mediation analyses were conducted to test the moderating effect of workplace support. As the background, the examination of a moderating variable is to determine whether the strength and direction of the effect of the independent variable on the dependent variable is different depending on a third variable (i.e., a moderator) (Fairchild & MacKinnon, 2009; Olsen, 2004). This study adopts a moderated-mediation model to test the proposed theoretical framework. As Muller, Judd, and Yzerbyt (2005) indicated, "moderated mediation happens if the mediating process that is responsible for producing the effect of the treatment on the outcome depends on the value of a moderator variable" (p. 854). The impact of the independent variable on the mediator variable depends on the moderator variable, or the impact (partial or full) of the mediator variable on the dependent variable depends on the moderator variables, or both situations might exist. In other words, the moderated-mediation model can help test whether the strength of the mediating effect is contingent on the moderator (Preacher, Rucker, & Hayes, 2007). The current study seeks to understand whether the association between employment adjustment and mental health is mediated by the family-to-work role conflict and further moderated by workplace support. Therefore, the moderated-meditation model is a suitable method for this study. More specifically, for the moderated-mediation analysis, the current study performed the interaction effects within regression analysis (Olsen, 2004), and followed steps and the SPSS macro PROCESS developed by Hayes (2009, 2013, 2015) using the "conditional process analysis" (Hayes, 2013, p. 9) to integrate mediation and moderation analysis in the same model.

Chapter Four: Results

4.1 Study Sample Characteristics

4.1.1 Demographic and Socioeconomic Characteristics of Participants

The unweighted sample in the current study is 1,696, with 996 female participants and 700 male participants. The results in Table 1 are presented for the weighted sample of 1,439,985 persons, with 726,883 males and 713,112 females, and the proportion of male participants is slightly higher than female ones (50.48% vs. 49.52%). Participants aged from 45 to 64 years old accounts for the majority of employed family caregivers (63.15%), followed by the age group 31 to 44 years old (23.93%) and then 15 to 30 years old (12.92%). Roughly two-thirds of the selected participants are married or living with a common-law partner. When it comes to the highest education attainment, only about 6% participants did not graduate from high school, and about 27% of them have a high school or equivalent degree, and about 67% participants have at least a college diploma or university degree. Among the selected cases, about 85% of them were born in Canada, and the remaining participants were born in other countries before moving to Canada. The majority of participants have religious beliefs that belong to Christian (61.27%), and those who have other religious beliefs and no religious beliefs are almost the same proportion, slightly less than 20%, each. In addition, about 15% of participants live in the same household with their primary care receivers, and the majority of them (73.30%) are taking care of their parents or parents-in-law. About 19% of caregivers are providing support to other family members who are older than 65 years old.

The average working hours per week for a participant is 40.95 hours. Almost 30% of participants earn less than $40,000 in the year before the survey, and about 30% of them earn from $40,000 to $60,000, and roughly earn 40% more than $60,000, respectively. Because of their caregiving responsibilities, slightly more than half of the participants (50.43%) have made employment adjustment. Furthermore, most participants indicated that they have different types of workplace support, and about 7% of them do not have any relevant support. More specifically, about 35.43% of the participants have access to flexible schedule allowing them to choose the time to begin and end their work day, 40.26% have the option to work part-time, roughly 80% have the support to take leave for spouse/ family members or to take extended leave for personal reason, and slightly more than 10% of participants have the option to telework. Relevant information related to each type of workplace support is listed in Appendix A.

4.1.2 Group Differences

Furthermore, bivariate analyses were conducted based on the participants' gender. The results based on gender are presented in Table 1. When comparing male and female participants, there are no significant differences related to age groups or marital status. However, a significantly higher proportion of female participants gain a better education regarding college and university level education. Significant differences also exist when comparing the variation of the country of birth and religious beliefs, where a higher proportion of female participants are born outside of Canada, and have Christian beliefs.

In addition, male participants tend to work longer every week than their female counterparts, and the proportion of male participants earn more than $60,000 per year is twice more than that of female ones (53.11% vs. 25.97%). In addition, there are no significant differences between male and female participants, regarding to their employment adjustment and available workplace support. Similar results are also identified, when it comes to participants' perceived family-to-work role conflict.

Female employed family caregivers perform significantly more caregiving tasks (3.42 vs. 2.74), and spend more time on caregiving (7.33 vs. 5.96), than their male counterparts. However, female participants receive significantly less informal or formal support related to caregiving responsibilities. In addition, a higher proportion of female participants do not live with their aging primary care receivers, compared to male participants. About 87% of female employed family caregivers and 83% males need to take care of a loved individual who is not living with them. There are no significant differences in respect to relationship with the primary care receiver, and both female and male participants tend to take care of their parents.

Table 1 *Demographic and Socioeconomic Characteristics of Participants in the GSS 26 and Cross-group Comparison by Female and Male participants (N=1,696, Weighted N=1,439,985)*

Demographic and socioeconomic characteristics	All	Gender		$\chi^2(df)$ / *t*-test; *p*-value
		Male	Female	
Age				
15 to 29	12.92%	13.97%	11.85%	2.01(2); p=0.366
30 to 44	23.93%	23.06%	24.82%	
45 to 64	63.15%	62.96%	63.33%	
Gender				
Male	50.48%	--	--	--
Female	49.52%			
Marital status				
Unmarried	28.91%	26.91%	30.95%	3.44 (1); p=0.064
Married	71.09%	73.09%	69.05%	
Educational attainment				
Lower than high school	6.31%	8.27%	4.31%	30.47(3); p<0.001
High school and equivalent	27.04%	31.06%	22.93%	
College diploma/certificate and equivalent	38.83%	35.75%	41.97%	
University degree and above	27.83%	24.92%	30.80%	
Country of birth				
Not Canada	15.37%	12.63%	18.13%	9.76(1); p=0.002
Canada	84.63%	87.37%	81.87%	
Religious belief				
No belief	19.45%	25.06%	13.76%	41.62 (2); p<0.001
Christian	61.27%	54.37%	68.29%	
Others	19.28%	20.58%	17.96%	
Working hours per week	40.95	44.09	37.79	12.43; p<0.001
Annual personal income				
Less then $40,000	30.62%	20.00%	41.69%	131.01 (2); p<0.001
Between $40,000 and $60,000	29.56%	26.88%	32.34%	
More than $60,000	39.82%	53.11%	25.97%	
Employment adjustment	0.67(0.83)	0.63(0.82)	0.71 (0.84)	-1.90; p=0.057
Workplace support				
Not available	7.15%	6.84%	7.47%	0.24(1); p=0.624
Available	92.85%	93.16%	92.53%	
Family-to-work role conflict	1.64(0.66)	1.63(0.68)	1.65(0.63)	-0.81; p=0.418
Informal support	1.32(1.28)	1.39(1.26)	1.24(1.28)	2.32; p=0.020
Formal support	0.28(0.57)	0.33(0.65)	0.23(0.48)	3.72; p<0.001
Caregiving tasks	3.07(1.61)	2.74(1.50)	3.42(1.66)	-8.86; p<0.001
Caregiving time	6.64(3.79)	5.96(3.58)	7.33(3.87)	-7.58; p<0.001
Living arrangement with the primary care receiver				
Not living together	85.07%	83.02%	87.17%	5.57(1); p=0.018
Living together	14.93%	16.98%	12.83%	
Relationship with the primary care receiver				
Parents	73.30%	74.39%	72.19%	4.71(2); p=0.095
Other family members	18.75%	19.04%	18.45%	
Others (e.g., friends)	7.95%	6.57%	9.36%	

4.1.3 Mental Health Status of Participants

There are four variables to indicate participants' mental health condition, including self-rated mental health, psychological symptoms, perceived life stress, and caregiving stress, within which higher score means worse mental health status for each indicator. The main results are illustrated in Table 2. Within the range from 1 to 5, the average score was 2.09 on self-rated mental health and 2.93 on life stress. Participants reported an average of 1.91 on the caregiving stress scale ranging from 1 to 4.

Among the ten different psychological symptoms, participants report an average of 2.44 symptoms on average. More specifically, about 48.21% of participants reported feeling tired, 50.97% reported the feeling of worried and anxious, 29.97% reported feeling overwhelmed, 12.40% reported the feeling of lonely and isolated, 32.50% reported feeling short-tempered or irritable, 17.11% reported feeling of resentful, 13.90% reported the feeling of depressed, about 7.96% reported the experience of appetite loss, 27.52 reported the experience of disturbed sleep, and 3.69% reported other symptoms. Relevant information related to each type of psychological symptoms is listed in Appendix B.

To examine the group differences, bivariate analyses were conducted regarding male and female participants (see Table 2). Generally speaking, male participants report better mental health status than female ones. For each indicator, male employed family caregivers report significantly lower scores than their female counterparts. Especially for psychological symptoms, on average, male participants (1.93) report one symptom less than female ones (2.96).

Table 2 *Mental Health of Participants in the GSS 26 and Cross-group Comparison of Mental Health Status by Female and Male participants (N=1,696, Weighted N=1,439,985)*

Mental health	All	Gender		*t*-test; *p*-value
		Male	Female	
Self-rated mental health	2.09 (0.92)	2.03 (0.91)	2.14 (0.93)	-2.44; *p*=0.015
Psychological symptoms	2.44 (2.47)	1.93 (2.18)	2.96 (2.64)	-8.75; *p*<0.001
Life stress	2.93 (0.93)	2.84 (0.95)	3.02 (0.91)	-4.07; *p*<0.001
Caregiving stress	1.91 (0.93)	1.72 (0.81)	2.10 (1.00)	-8.62; *p*<0.001

4.2 Research Question 1

In the current study, the first research question intends to examine the direct relationship between employment adjustment and mental health, and there are four indictors for the mental health status of participants, including self-rated mental health, psychological symptoms, the perceived life stress, and caregiving stress. A 3-model hierarchical linear regression analysis was conducted to examine the association between employment adjustment and mental health status indicators. During the data analysis, variables related to employment adjustment, participants' socioeconomic and demographic background, and information of primary care receivers were included into data analysis step by step. The main results for the mental health status indictors, including self-rated mental health, psychological symptoms, the perceived life stress, and caregiving stress, are illustrated in Table 3, Table 4, Table 5, and Table 6 respectively.

Self-Rated Mental Health. As indicated in Table 3, the association between employment adjustment and self-rated mental health are positive and significant in all three models. First of all, when no control variables are included, the results of Model 1 show that participants with more employment adjustment (Beta: 0.079, p=0.003) report worse self-rated mental health. Second, in Model 2, when participants' socioeconomic and demographic backgrounds were included as control variables, two variables are significantly associated with self-rated mental health. Specifically, (1) female participants (Beta: 0.072, p=0.014) report worse self-rated mental health, and (2) Canadian born participants (Beta: 0.062, p=0.022) report worse self-rated mental health. Last, when all the relevant variables are included, the results of model 3 show that participants with more employment adjustment (Beta: 0.080, p=0.004) reports worse self-rated mental health. In addition, in Model 3, when the factors related to primary care receivers are included, gender and birthplace remain as significant associated factors. Three other factors related to primary care receivers are also significantly associated with self-rated mental health. When compared to supporting people with aging and frailty issues, participants supporting people with mental and/or neurological issues (Beta: 0.132, $p<0.001$) tend to report worse self-rated mental health. Additionally, when primary care receivers need professional care (Beta: 0.059, $p=0.038$), participants tend to report self-rated mental health more negatively. Furthermore, participants with more time spent on caregiving (Beta: -0.099, $p=0.034$) would be less likely report worse self-rated mental health. In addition, in Model 1 the employment adjustment explains 0.6% of the variation of self-rated mental health, and the Model 3 explains about 5.3% of the variation of self-rated mental health.

Table 3 *Hierarchical Linear Regression of Self-rated Mental Health among All Participants*

	Model 1			Model 2			Model 3		
	Beta	95% CI for B	*p* value	Beta	95% CI for B	*p* value	Beta	95% CI for B	*p* value
Employment adjustment	0.079	0.030/ 0.144	*p*=0.003	0.082	0.032/ 0.149	*p*=0.002	0.080	0.028/ 0.149	*p*=0.004
Age of participants (15 to 30)									
31 to 44				-0.002	-0.178/ 0.170	*p*=0.967	-0.009	-0.206/ 0.168	*p*=0.842
45 to 64				0.020	-0.124/ 0.200	*p*=0.647	0.017	-0.164/ 0.228	*p*=0.749
Gender of participants (Male)									
Female				0.072	0.027/ 0.239	*p*=0.014	0.080	0.038/ 0.258	*p*=0.008
Marital status of participants (Unmarried)									
Married				-0.028	-0.173/ 0.060	*p*=0.339	-0.023	-0.168/ 0.073	*p*=0.437
Educational attainment of participants (Lower than high school)									
High school and equivalent				0.050	-0.108/ 0.316	*p*=0.338	0.045	-0.119/ 0.305	*p*=0.388
College diploma/certificate and equivalent				0.083	-0.053/ 0.365	*p*=0.143	0.078	-0.063/ 0.356	*p*=0.171
University degree and above				-0.005	-0.233/ 0.211	*p*=0.924	-0.022	-0.270/ 0.177	*p*=0.683
Country of birth of participants (Not Canada)									
Canada				0.062	0.024/ 0.299	*p*=0.022	0.073	0.047/ 0.329	*p*=0.009
The religious belief of participants (No belief)									
Christian				0.033	-0.064/ 0.188	*p*=0.333	0.038	-0.054/ 0.198	*p*=0.263
Others				0.032	-0.078/ 0.231	*p*=0.332	0.030	-0.086/ 0.226	*p*=0.377
Working hours per week of participants				0.010	-0.004/ 0.006	*p*=0.732	0.013	-0.004/ 0.006	*p*=0.662
Annual personal income of participants (Less than $40,000)									
Between $40,000 and $60,000				0.004	-0.122/ 0.140	*p*=0.893	-0.006	-0.142/ 0.119	*p*=0.860
More than $60,000				-0.012	-0.164/ 0.117	*p*=0.744	-0.019	-0.177/ 0.105	*p*=0.618
Age of primary care receiver (65 to 74)									
75 to 84							-0.038	-0.195/ 0.052	*p*=0.258
85 and older							0.015	-0.116/ 0.176	*p*=0.689
Gender of primary care receiver (male)									
Female							-0.012	-0.131/ 0.083	*p*=0.660

The health condition of primary care receiver (Aging and frailty)									
Chronic issues and disability							0.043	-0.033/ 0.197	*p*=0.163
Mental and neurological issues							0.132	0.189/ 0.488	*p*<0.001
Others							-0.013	-0.304/ 0.187	*p*=0.640
Receive professional care (No)									
Yes							0.059	0.006/ 0.215	*p*=0.038
Relationship with primary care receiver (Parents)									
Other family members							-0.045	-0.267/ 0.057	*p*=0.205
Other individual (e.g., friends)							-0.012	-0.236/ 0.057	*p*=0.671
Living arrangement (Not living together)									
Living together							0.042	-0.046/ 0.262	*p*=0.169
Caregiving tasks							0.041	-0.031/ 0.078	*p*=0.398
Caregiving time spent							-0.099	-0.046/ 0.002	*p*=0.034
R square	0.006			0.025			0.053		
R square change	0.006			0.018			0.028		
F change	9.01	*p*=0.001		2.08	*p*=0.013		3.51	*p*<0.001	

Note. The reference group is listed in the bracket.

Psychological Symptoms. Table 4 shows the results related to psychological symptoms. In this table, employment adjustment is positively correlated to the amount of psychological symptoms. First of all, when no control variables are included, the results of Model 1 show that participants with more employment adjustment (Beta: 0.398, $p<0.001$) report more psychological symptoms.

Second, in Model 2, when participants' socioeconomic and demographic background are included as control variables, Age, gender, education, and country of birth are significantly associated with psychological symptoms. More specifically, (1) when compared to participants aged from 15 to 29 years old, those who are 45 to 64 years old (Beta: 0.112, $p=0.004$) report more psychological symptoms; (2) female participants (Beta: 0.204, $p<0.001$) tend to experience more psychological symptoms than males; (3) participants with a high school or equivalent level education (Beta: -0.111, $p=0.017$), and with a college-level education (Beta: -0.100, $p=0.048$) would report fewer psychological symptoms than those without a high school education; and (4) Participants born in Canada (Beta: -0.079, $p=0.001$) would experience fewer psychological symptoms comparing to their immigrant counterparts.

Third, most importantly, the result of Model 3 demonstrates that the more employment adjustment (Beta: 0.273, $p<0.001$) participants make, the more psychological symptoms they would have, when all relevant control variables are included. In Model 3, when factors related to primary care receivers are included, the associations between psychological symptoms and gender, education and country of birth remain significant, but the association with age becomes insignificant. Additionally, primary care receivers' health condition, professional care need, and participants' relationship with primary care receivers and caregiving intensity are significantly correlated to the amount of psychological symptoms. Specifically, when participants' primary care receivers need family caregiving due to chronic issues and disability (Beta: 0.057, $p=0.027$), or mental and neurological issues (Beta: 0.148, $p<0.001$), participants tend to report more psychological symptoms, compared to those whose primary care receivers' needs are related to aging and frailty. Also, when primary care receivers need professional care (Beta: 0.106, $p<0.001$), participants tend to experience more psychological symptoms. Different relationships with primary care receivers also correlate with the amount of psychological symptoms, where participants who take care of their parents or parents-in-law tend to report more psychological symptoms than those who support other family members (Beta: -0.094, $p=0.001$), and other individuals (e.g., friends) (Beta: -0.067, $p=0.003$). Caregiving intensity is positively associated with the amount of psychological symptoms. Both the amount of caregiving tasks performed (Beta: 0.117, $p=0.004$) and the time spent on caregiving (Beta: 0.192, $p<0.001$) are positively correlated to the number of psychological symptoms. Also, in Model 1, about 15.8% the variance of the amount of psychological symptoms reported by participants is explained by employment adjustment. And in Model 3, when all the variables are included, the final model explains about 35.4% of variance of psychological symptoms.

Table 4 *Hierarchical Linear Regression of Psychological Symptoms among All Participants*

	Model 1			Model 2			Model 3		
	Beta	95% CI	*p* value	Beta	95% CI	*p* value	Beta	95% CI	*p* value
Employment adjustment	0.398	1.026/ 1.303	$p<0.001$	0.371	0.947/ 1.223	$p<0.001$	0.273	0.666/ 0.930	$p<0.001$
Age of participants (15 to 30)									
31 to 44				0.040	-0.183/ 0.640	$p=0.276$	0.001	-0.404/ 0.415	$p=0.980$
45 to 64				0.112	0.185/ 0.950	$p=0.004$	0.049	-0.181/ 0.677	$p=0.257$
Gender of participants (Male)									
Female				0.204	0.749/ 1.251	$p<0.001$	0.132	0.406/ 0.887	$p<0.001$
Marital status of participants (Unmarried)									
Married				0.012	-0.208/ 0.342	$p=0.635$	0.014	-0.188/ 0.338	$p=0.578$
Educational attainment of participants (Lower than high school)									
High school and equivalent				-0.111	-1.113/ 0.111	$p=0.017$	-0.121	-1.128/ -0.200	$p=0.005$
College diploma/certificate and equivalent				-0.100	-0.995/ -0.006	$p=0.048$	-0.097	-0.944/ -0.026	$p=0.038$
University degree and above				-0.084	-0.992/ 0.059	$p=0.082$	-0.118	-1.148/ -0.168	$p=0.009$
Country of birth of participants (Not Canada)									
Canada				-0.079	-0.864/ -0.213	$p=0.001$	-0.059	-0.712/ -0.094	$p=0.011$
The religious belief of participants (No belief)									
Christian				0.041	-0.090/ 0.505	$p=0.172$	0.021	-0.171/ 0.380	$p=0.458$
Others				0.022	-0.226/ 0.505	$p=0.454$	0.005	-0.310/ 0.372	$p=0.859$
Working hours per week of participants				-0.011	-0.014/ 0.009	$p=0.661$	-0.014	-0.014/ 0.008	$p=0.565$
Annual personal income of participants (Less than $40,000)									
Between $40,000 and $60,000				-0.009	-0.356/ 0.262	$p=0.767$	-0.026	-0.423/ 0.148	$p=0.346$
More than $60,000				0.033	-0.165/ 0.498	$p=0.325$	-0.024	-0.430/ 0.188	$p=0.442$
Age of primary care receiver (65 to 74)									
75 to 84							-0.022	-0.381/ 0.162	$p=0.428$
85 and older							0.013	-0.247/ 0.392	$p=0.656$
Gender of primary care receiver (male)									
Female							-0.008	-0.275/ 0.191	$p=0.719$

The health condition of primary care receiver (Aging and frailty)							
Chronic issues and disability					0.057	0.033/ 0.527	$p=0.027$
Mental and neurological issues					0.148	0.683/ 1.337	$p<0.001$
Others					-0.001	-0.554/ 0.22	$p=0.954$
Receive professional care (No)							
Yes					0.106	0.293/ 0.750	$p<0.001$
Relationship with primary care receiver (Parents)							
Other family members					-0.094	-0.942/ -0.233	$p=0.001$
Other individual (e.g., friends)					-0.067	-1.069/ -0.219	$p=0.003$
Living arrangement (Not living together)							
Living together					-0.003	-0.359/ 0.315	$p=0.898$
Caregiving tasks					0.117	0.058/ 0.297	$p=0.004$
Caregiving time spent					0.192	0.075/ 0.172	$p<0.001$
R square	0.158		0.223		0.354		
R square change	0.158		0.065		0.130		
F change	270.48	$p<0.001$	9.17	$p<0.001$	23.74	$p<0.001$	

Note. The reference group is listed in the bracket.

Life Stress. The results of the regression analysis on life stress are illustrated in Table 5. Employment adjustment keeps as a significant associated factor with life stress in all three models. First, when no control variables are included, the results of Model 1 show that participants with more employment adjustment (Beta: 0.178, $p<0.001$) report a higher level of life stress.

Second, in Model 2, when participants' socioeconomic and demographic background are included as control variables, there are five factors showing significant association with life stress: (1) when compared to participants aged from 15 to 29 years old, the age group of 45 to 64 years old (Beta: 0.117, $p=0.005$) tends to report a higher level of life stress; (2) female participants (Beta: 0.131, $p<0.001$), and (3) participants with more weekly working hours (Beta: 0.104, $p<0.001$) are more likely to experience a higher level of life stress; (4) participants with a higher level of education, including college level (Beta: 0.119, $p=0.032$) and university level (Beta: 0.224, $p<0.001$), tend to experience a higher level of life stress; and (5) participants who earn more than $60, 000 annually (Beta: 0.077, $p=0.034$) tend to experience a higher level of life stress than those who earn less than $40, 000 per year.

Last but not least, in Model 3, when all the relevant variables are controlled, the employment change is positively related to participants' perceived life stress (Beta: 0.134, $p<0.001$). In Model 3, after including variables related to primary care receivers, those associations identified in Model 2 remain statistically significant, except the personal annual income. Apart from those, significant difference also exists related to the age of primary care receivers, where for those whose primary care receiver belongs to the age group of 75 to 84 years old (Beta: -0.067, $p=0.040$), participants are more like to experience a lower level of life stress, compared to the age group of 65 to 74 years old. Also, compared to helping individuals with aging and frailty issues, participants helping individuals with mental and neurological issues (Beta: 0.107, *p*<0.001) tend to experience a higher level of life stress. The same is identified when primary care receivers need professional care (Beta: 0.055, *p*=0.046). Additionally, when the primary care receivers are participants' friends or co-workers (Beta: -0.066, *p*=0.012) rather than their parents (or parents-in-law), participants would be less likely to report life stress. What's more, based on the data analysis results, about 3.2% of the variance of life stress can be explained by employment adjustment in Model 1, and about 12.7% of variance of life stress can be explained by Model 3 with all variables of interests.

Table 5 *Hierarchical Linear Regression of Life Stress among All Participants*

	Model 1			Model 2			Model 3		
	Beta	95% CI	*p* value	Beta	95% CI	*p* value	Beta	95% CI	*p* value
Employment adjustment	0.178	0.142/ 0.256	*p* <0.000	0.155	0.117/ 0.231	*p*<0.000	0.134	0.092/ 0.209	*p*<0.001
Age of participants (15 to 30)									
31 to 44				0.047	-0.067/ 0.272	*p*=0.237	0.051	-0.070/ 0.295	*p*=0.225
45 to 64				0.117	0.069/ 0.385	*p*=0.005	0.126	0.052/ 0.436	*p*=0.013
Gender of participants (Male)									
Female				0.131	0.143/ 0.350	*p*<0.001	0.124	0.125/ 0.340	*p*<0.001
Marital status of participants (Unmarried)									
Married				-0.007	-0.128/ 0.100	*p*=0.809	-0.013	-0.145/ 0.091	*p*=0.651
Educational attainment of participants (Lower than high school)									
High school and equivalent				0.069	-0.066/ 0.356	*p*=0.177	0.053	-0.099/ 0.323	*p*=0.298
College diploma/certificate and equivalent				0.119	0.019/ 0.436	*p*=0.032	0.105	-0.009/ 0.410	*p*=0.060
University degree and above				0.224	0.257/ 0.700	*p*<0.001	0.193	0.188/ 0.634	*p*<0.001
Country of birth of participants (Not Canada)									
Canada				0.014	-0.099/ 0.171	*p*=0.602	0.019	-0.087/ 0.190	*p*=0.466
The religious belief of participants (No belief)									
Christian				0.035	-0.056/ 0.190	*p*=0.285	0.039	-0.047/ 0.198	*p*=0.227
Others				0.008	-0.132/ 0.171	*p*=0.800	0.005	-0.140/ 0.165	*p*=0.871
Working hours per week of participants				0.104	0.004/ 0.014	*p*<0.001	0.106	0.005/ 0.014	*p*<0.001
Annual personal income of participants (Less than $40,000)									
Between $40,000 and $60,000				-0.012	-0.153/ 0.103	*p*=0.702	-0.017	-0.162/ 0.093	*p*=0.597
More than $60,000				0.077	0.012/ 0.286	*p*=0.034	0.062	-0.018/ 0.257	*p*=0.090
Age of primary care receiver (65 to 74)									
75 to 84							-0.067	-0.249/ -0.006	*p*=0.040
85 and older							-0.008	-0.159/ 0.126	*p*=0.820
Gender of primary care receiver (male)									
Female							-0.037	-0.181/ 0.027	*p*=0.147

The health condition of primary care receiver (Aging and frailty)							
Chronic issues and disability					0.013	-0.087/ 0.138	*p*=0.656
Mental and neurological issues					0.107	0.134/ 0.426	*p*<0.001
Others					0.017	-0.161/ 0.319	*p*=0.519
Receive professional care (No)							
Yes					0.055	0.002/ 0.206	*p*=0.046
Relationship with primary care receiver (Parents)							
Other family members					-0.035	-0.241/ 0.076	*p*=0.306
Other individual (e.g., friends)					-0.066	-0.435/ 0.053	*p*=0.012
Living arrangement (Not living together)							
Living together					0.001	-0.149/ 0.152	*p*=0.984
Caregiving tasks					0.053	-0.023/ 0.084	*p*=0.262
Caregiving time spent					-0.029	-0.029/ 0.015	*p*=0.516
R square	0.032		0.101		0.127		
R square change	0.032		0.069		0.026		
F change	46.80	*p*<0.001	8.38	*p*<0.001	3.53	*p*<0.001	

Note. The reference group is listed in the bracket.

Caregiving Stress. As indicated in Table 6, the association between employment adjustment and caregiving stress stays significant in all three models. First, the results of Model 1 show that participants with more employment adjustment (Beta: 0.319, $p<0.001$) report a higher level of caregiving stress, when no control variables are included. Second, in Model 2, after participants' socioeconomic and demographic backgrounds were introduced as control variables, there are three variables significantly correlated to caregiving stress. Specifically, (1) female participants (Beta: 0.207, $p<0.001$) tend to report a higher level of caregiving stress than male ones; (2) Canada born participants (Beta: -0.072, $p=0.004$) are less likely to report caregiving stress than participants born out of Canada; and (3) compared to participants with lower than high school education, those with a university degree (Beta: 0.128, $p=0.012$) tend to report a higher level of caregiving stress.

Last but most importantly, when all the relevant variables are included in Model 3, the results show that participant with more employment adjustment (Beta: 0.191, $p<0.001$) tend to report a higher level of caregiving stress. In Model 3, after including the variables related to care receivers, gender and education remain as significant factors, but not birthplace. More importantly, participants who need to support aging people with chronic issues and disability (Beta: 0.098, $p<0.001$), as well as mental and neurological issues (Beta: 0.347, $p<0.001$) tend to report a higher level of caregiving stress, compared to those supporting individuals with aging or frailty issues. Also, participants, whose care receivers need professional care (Beta: 0.091, $p<0.001$), are more likely to report increasing caregiving stress. Moreover, when participants' primary care receivers are their other family members (Beta: -0.115, $p<0.001$), or other individuals (e.g., friends) (Beta: -0.053, $p=0.023$), they are less likely to report caregiving stress. At last, participants who need to perform more caregiving task (Beta: 0.223, $p<0.001$), and spend more time on caregiving (Beta: 0.083, *p*=0.038) tend to report a higher level of caregiving stress. Furthermore, the Model 1 illustrates that the employment adjustment explains 10.2% of the variation of caregiving stress perceived by participants, and the Model 3 explains 31.0% of the variation of caregiving stress perceived by participants.

Summary. Based on the literature review and research question, hypothesis 1 proposes that employment adjustment is negatively related to participants' mental health status. The results of the regression analysis illustrated in Table 3, Table 4, Table 5, and Table 6 provide consistently empirical evidence to support the prediction of hypothesis 1. To sum up, participants who make more employment adjustment tend to report worse self-rated mental health, more psychological symptoms and a higher level of life stress and caregiving stress. In addition, the results related to R^2 in the regression indicate the employment adjustment can explain and predict the variation of four mental health indicators to different extent. For the self-rated mental health and life stress, the relatively small but significant R^2 reflects the fact that mental health is a complex concept which is affected by many life aspects, and caregiving can be also one of them.

Table 6 *Hierarchical Linear Regression of Caregiving Stress among All Participants*

	Model 1			Model 2			Model 3		
	Beta	95% CI	p value	Beta	95% CI	p value	Beta	95% CI	p value
Employment adjustment	0.319	0.294/ 0.401	$p<0.001$	0.294	0.268/ 0.374	$p<0.001$	0.191	0.157/ 0.259	$p<0.001$
Age of participants (15 to 30)									
31 to 44				-0.011	-0.181/ 0.136	$p=0.780$	-0.057	-0.279/ 0.037	$p=0.133$
45 to 64				0.043	-0.067/ 0.229	$p=0.283$	-0.035	-0.232/ 0.099	$p=0.430$
Gender of participants (Male)									
Female				0.207	0.282/ 0.476	$p<0.001$	0.133	0.151/ 0.337	$p<0.001$
Marital status of participants (Unmarried)									
Married				0.031	-0.043/ 0.169	$p=0.247$	0.036	-0.030/ 0.173	$p=0.165$
Educational attainment of participants (Lower than high school)									
High school and equivalent				0.048	-0.098/ 0.295	$p=0.326$	0.049	-0.081/ 0.281	$p=0.280$
College diploma/certificate and equivalent				0.033	-0.231/ 0.256	$p=0.553$	0.043	-0.098/ 0.260	$p=0.376$
University degree and above				0.128	0.059/ 0.470	$p=0.012$	0.095	0.006/ 0.388	$p=0.043$
Country of birth of participants (Not Canada)									
Canada				-0.072	-0.310/ -0.059	$p=0.004$	-0.046	-0.237/ 0.001	$p=0.052$
The religious belief of participants (No belief)									
Christian				-0.0001	-0.115/ 0.115	$p=0.998$	-0.024	-0.151/ 0.061	$p=0.409$
Others				0.012	-0.112/ 0.170	$p=0.691$	-0.016	-0.169/ 0.094	$p=0.574$
Working hours per week of participants				0.018	-0.003/ 0.006	$p=0.513$	0.015	-0.003/ 0.005	$p=0.542$
Annual personal income of participants (Less than \$40,000)									
Between \$40,000 and \$60,000				0.007	-0.106/ 0.134	$p=0.819$	-0.012	-0.135/ 0.086	$p=0.665$
More than \$60,000				0.031	-0.070/ 0.187	$p=0.370$	-0.027	-0.170/ 0.068	$p=0.399$
Age of primary care receiver (65 to 74)									
75 to 84							0.001	-0.103/ 0.107	$p=0.996$
85 and older							0.044	-0.035/ 0.212	$p=0.160$
Gender of primary care receiver (male)									
Female							-0.022	-0.135/ 0.045	$p=0.329$

The health condition of primary care receiver (Aging and frailty)							
Chronic issues and disability					0.098	0.087/ 0.282	$p<0.001$
Mental and neurological issues					0.187	0.347/ 0.599	$p<0.001$
Others					0.019	-0.121/ 0.293	$p=0.417$
Receive professional care (No)							
Yes					0.091	0.078/ 0.255	$p<0.001$
Relationship with primary care receiver (Parents)							
Other family members					-0.115	-0.405/ -0.130	$p<0.001$
Other individual (e.g., friends)					-0.053	-0.354/ -0.026	$p=0.023$
Living arrangement (Not living together)							
Living together					0.002	-0.126/ 0.136	$p=0.941$
Caregiving tasks					0.223	0.080/ 0.172	$p<0.001$
Caregiving time spent					0.083	0.001/ 0.039	$p=0.038$
R square	0.102		0.167		0.310		
R square change	0.102		0.065		0.143		
F change	162.22	$p<0.001$	8.54	$p<0.001$	24.35	$p<0.001$	

Note. The reference group is listed in the bracket.

4.3 Research Question 2

In order to better understand the relationship between employment adjustment and mental health outcomes of employed family caregivers, family-to-work role conflict was further included in the data analysis to examine the mediating effect of family-to-work role conflict for the relationship between employment adjustment and mental health. A group of mediation function analyses was carried out to examine the relationships among employment adjustment, family-to-work role conflict, and mental health indicators. Since the mental health has four indicators, four models were built for each indicator, including self-rated mental health, psychological symptoms, the life stress, and caregiving stress. Figure 2 to Figure 5 show the mediation analyses results for all participants. In these figures, the statistics in the brackets indicate the strength of association between employment adjustment and mental health before the family-to-work role conflict was included into the analyses.

Employment Adjustment and Family-to-Work Role Conflict (H2). As shown in Figure 2, 3, 4 and 5, when all the other relevant variables are controlled, the relationship between employment adjustment and family-to-work role conflict is significant and positive in all analyses with very similar coefficients (Figure 2: Beta: 0.167, p<0.001; Figure 3: Beta: 0.166, p<0.001; Figure 4: Beta: 0.165, p<0.001; Figure 5: Beta: 0.167, p<0.001). The results consistently show that employment adjustment is positively associated with family-to-work role conflict. Therefore, Hypothesis 2 is supported that family caregivers with more employment adjustment would experience a higher level of family-to-work role conflict.

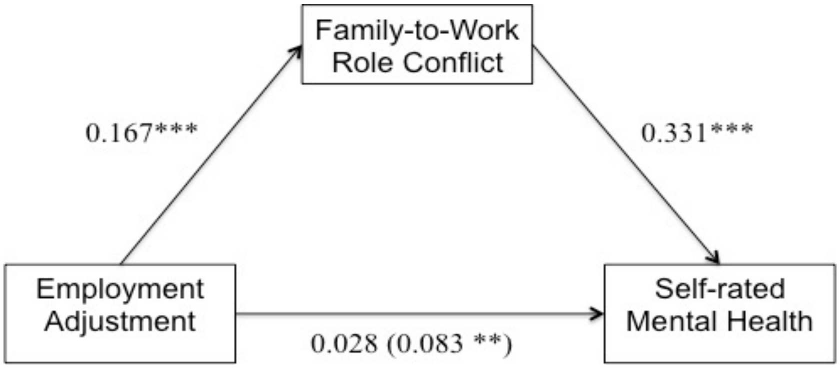
Family-to-Work Role Conflict and Mental Health of Family Caregivers (H3). As shown in Figure 2, 3, 4 and 5, when all the other relevant variables are controlled, the correlation between family-to-work role conflict and four mental health indicators are statistically significant in all analyses. For different indicators of caregivers' mental health, although the association coefficients are slightly different (for self-rated mental health in Figure 2, Beta: 0.331, $p<0.001$; for psychological symptoms in Figure 3, Beta: 1.192, $p<0.001$; for life stress in Figure 4, Beta: 0.440, $p<0.001$; for caregiving stress in Figure 5, Beta: 0.335, $p<0.001$), the effect of family-to-work role conflict is a consistently significant factor, indicating the significant and positive relationship between family-to-work role conflict and the mental health of employed family caregivers. Therefore, Hypothesis 3 is supported that family caregivers with a higher level of family-to-work role conflict would experience worse mental health.

Mediating Effect of Family-to-Work Role Conflict (H4). As illustrated in Figure 2 to Figure 5, Hypothesis 4 is supported by the results. From Figure 2 to Figure 5, the coefficient in the parenthesis indicates the relationship between employment adjustment and mental health indicators when mediator (family-to-work role conflict) was not included, and the coefficient before the parenthesis indicates the relationship between employment adjustment and mental health indicators when mediator (family-to-work role conflict) was included.

First, the family-to-work role conflict serves as a full mediator of the relationship between employment adjustment and self-rated mental health for all participants (see Figure 2), because after the family-to-work role conflict is introduced into the data analysis, the relationship between employment adjustment and self-rated mental health becomes insignificant. Second, the family-to-work role conflict serves as a partial mediator of the relationships between employment adjustment and psychological symptoms, life stress and caregiving stress (see Figure 3, Figure 4, and Figure 5). After the family-to-work role conflict is introduced into the data analysis, the relationships between employment adjustment and these three indicators of family caregivers' mental health remain significant, but the mediation analyses show the indirect effects of employment adjustment via the family-to-work role conflict on these three indicators of caregivers' mental health are significant.

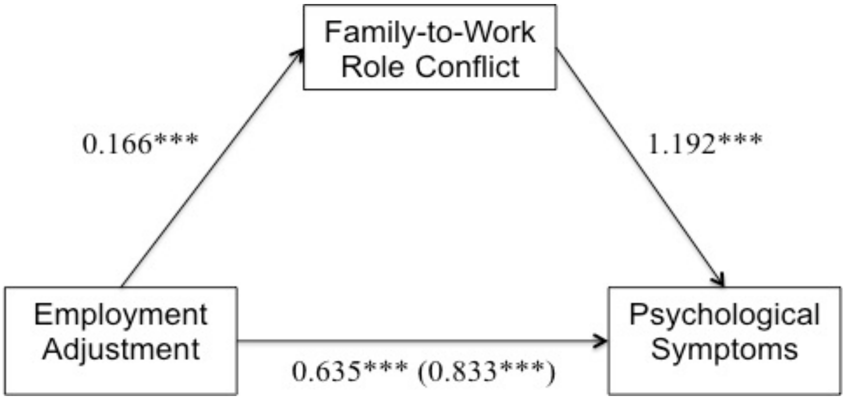
In addition, using the bootstrapping method (Hayes, 2013), the indirect effect of family-to-work role conflict between employment adjustment and four mental health indicators was also supported. Specifically, all the 95% CIs do not include zero, and the mediating effect of family-to-work role conflict between employment adjustment and self-rated mental health is 0.055, 95% CI [0.038, 0.078], and is 0.198, 95% [0.149, 0.256] between employment adjustment and psychological symptoms, and is 0.068, 95% CI [0.047, 0.091] between employment adjustment and life stress, and is 0.056, 95% CI [0.040, 0.074] between employment adjustment and caregiving stress. In other words, this suggests that the family-to-work role conflict is one important mechanism underlying the impact of employment adjustment for psychological symptoms, life stress, and caregiving stress may work.

Summary. In this part, in order to understand how the family-to-work role conflict plays a role in understanding the relationship between employment adjustment and caregivers' mental health, mediation analyses were conducted, and the results shown in this section provide empirical evidence to support Hypothesis 2, Hypothesis 3 and Hypothesis 4. First, when all the other relevant variables are controlled, the relationship between employment adjustment and family-to-work role conflict is consistently positive and significant in all analyses. The results show that employment adjustment is positively associated with family-to-work role conflict, supporting Hypothesis 2. Second, the relationship between family-to-work role conflict and four mental health indicators all are statistically positive and significant, which indicates the significant association relationship between family-to-work role conflict and the mental health of employed family caregivers, supporting Hypothesis 3. Third, most importantly, although the family-to-work role conflict is identified as a full mediator for the relationship between employment adjustment and self-rated mental health and a partial mediator for the relationships between employment adjustment and the other three indicators (i.e., psychological symptoms, life stress, and caregiving stress), however, the family-to-work role conflict consistently serves as a significant mediator of the relationship between employment adjustment and four indicators of caregivers' mental health, supporting Hypothesis 4.



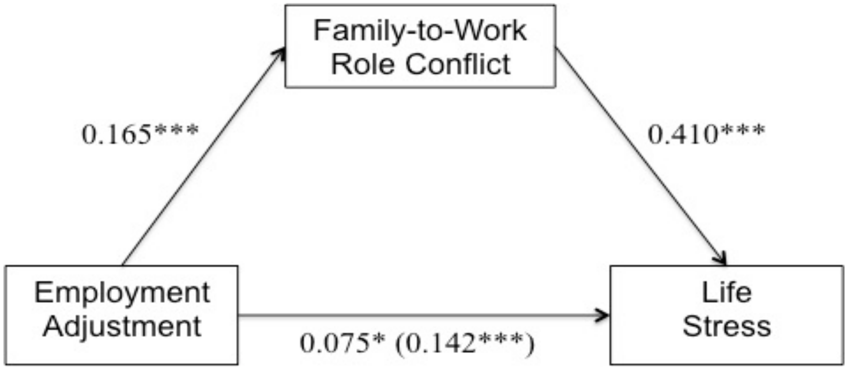
Note: *** *p*< 0.001, ***p*<0.01, **p*<0.05

Figure 2 Mediation analysis of family-to-work role conflict among all participants (DV: Self-rated mental health)



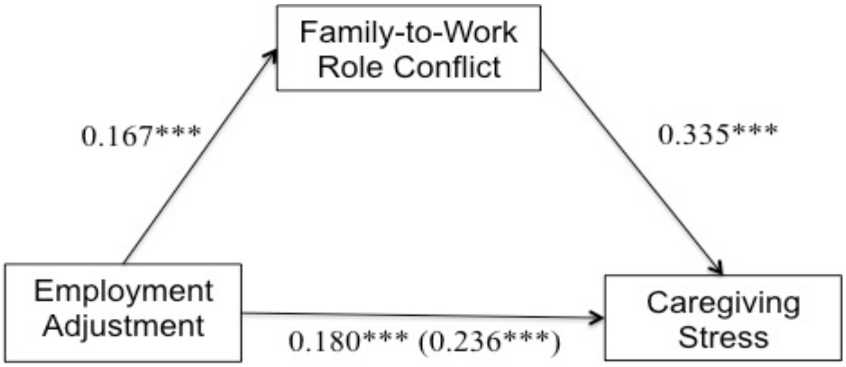
Note: *** *p*< 0.001, ***p*<0.01, **p*<0.05

Figure 3 Mediation analysis of family-to-work role conflict among all participants (DV: Psychological symptoms)



Note: *** $p< 0.001$, **$p<0.01$, *$p<0.05$

Figure 4 Mediation analysis of family-to-work role conflict among all participants (DV: Life stress)



Note: *** $p< 0.001$, **$p<0.01$, *$p<0.05$

Figure 5 Mediation analysis of family-to-work role conflict among all participants (DV: Caregiving stress)

4.4 Research Question 3

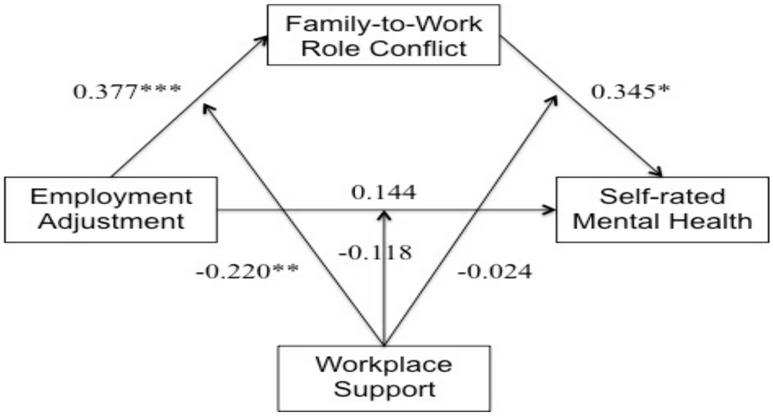
According to the theoretical framework, in this part, workplace support as a moderator is included in the moderated-mediation model analysis. At the same time, for the moderated-mediation analysis, all the listed employed family caregivers and care receiver relevant factors were included as control variables.

Moderating Effect of Workplace Support on the Relationship between the Employment Adjustment and the Family-to-Work Role Conflict (H5). Results for the moderated-mediation analyses are displayed from Figure 6 to Figure 9. As illustrated, when examining the four different mental health indicators (self-rated mental health in Figure 6; psychological symptoms in Figure 7; life stress in Figure 8; and caregiving stress in Figure 9), the interactions between employment adjustment and workplace support on the family-to-work role conflict in all four models are consistently significant and negative. These results suggest that when participants can receive workplace support, their employment adjustment tends to create less family-to-work role conflict, and further leads to less mental health issues.

Moderating Effect of Workplace Support on the Relationship between the Family-to-Work Role Conflict and Caregivers' Mental Health (H6). As illustrated in Figure 6 to 9, when examining the four different mental health indicators, none of the interactions between the family-to-work role conflict and workplace support on caregivers' mental health in all four models are significant. This shows that the availability of workplace support does not moderate the relationship between the family-to-work role conflict and caregivers' mental health outcomes, failing to support Hypothesis 6.

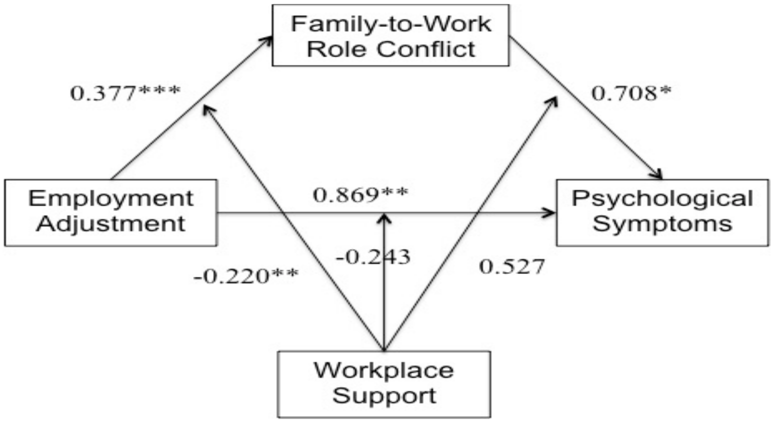
Moderating Effect of Workplace Support on the Relationship between the Employment Adjustment and Caregivers' Mental Health (H7). As demonstrated in Figure 6 to 9, none of the interactions between employment adjustment and workplace support on any indicators of caregivers' mental health in all four models are significant. This shows that the availability of workplace support does not directly moderate the relationship between the employment adjustment and caregivers' mental health, failing to support Hypothesis 7.

Summary. Research question 3 aims to examine the moderating role of workplace support on the mediating effect of the family-to-work role conflict on the relationship between employment adjustment and caregivers' mental health. Moderated-mediation analyses conducted on the four indicators of caregivers' mental health show that the workplace support mainly works as a moderator on the relationship between employment adjustment and the family-to-work role conflict (supporting Hypothesis 5), instead of on the relationship between employment adjustment and caregivers' mental health or the relationship between the family-to-work role conflict and caregivers' mental health (fail to support Hypothesis 6 or 7). These results show the positive impact of workplace support, because when participants can receive workplace support, their employment adjustment tends to create less family-to-work role conflict, and further leads to less mental health issues.



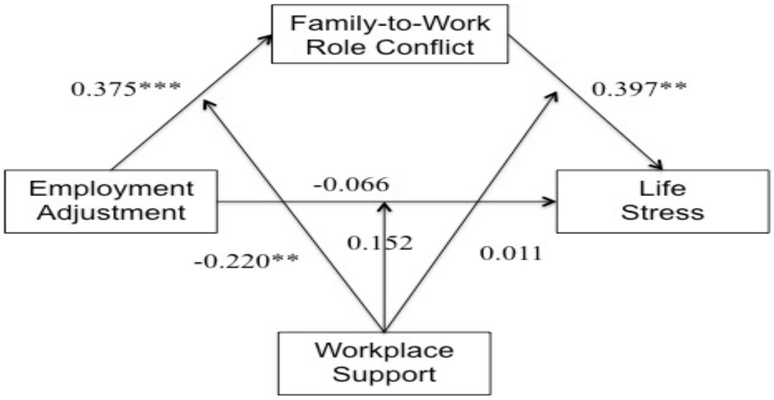
Note: *** $p < 0.001$, ** $p<0.01$, * $p<0.05$

Figure 6 Moderated-meditation analysis for workplace support among all participants (DV: Self-rated mental health)



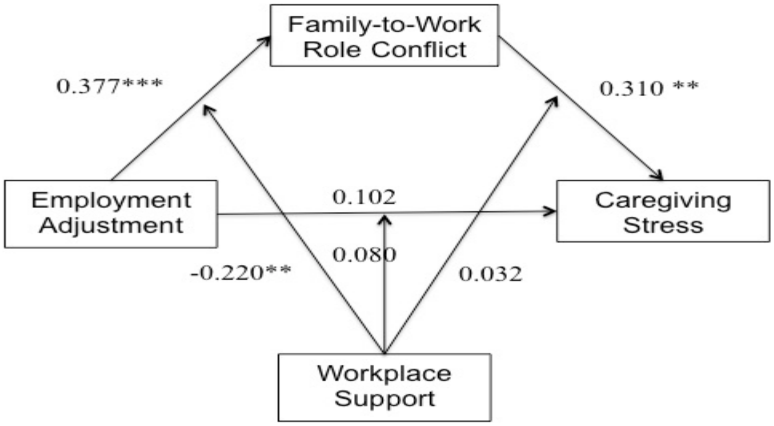
Note: *** $p < 0.001$, ** $p<0.01$, * $p<0.05$

Figure 7 Moderated-meditation analysis for workplace support among all participants (DV: Psychological symptoms)



Note: *** $p< 0.001$, **$p<0.01$, *$p<0.05$

Figure 8 Moderated-meditation analysis for workplace support among all participants (DV: Life stress)



Note: *** $p< 0.001$, **$p<0.01$, *$p<0.05$

Figure 9 Moderated-meditation analysis for workplace support among all participants (DV: Caregiving stress)

4.5 Summary

The Results part displays the data analyses results to help us understand the basic descriptive characteristics of the research sample used in this study, and, more importantly, examine the three research questions of this study and the seven proposed research hypotheses.

First, according to the descriptive analyses in section 4.1, the following results are identified. (1) The research sample used in this study is a representative sample made up of participants with diversified backgrounds. (2) When it relates to caregiving tasks and time spent, and the formal and informal support received by family caregivers, group differences are identified among participants with the different gender. (3) Participants' perceived mental health status shows a significant difference between male and female participants.

Second, the data analysis results in section 4.2 demonstrate that participants who make employment adjustment tend to report worse self-rated mental health, more psychological symptoms and a higher level of life stress, and caregiving stress. These results support Hypothesis 1.

Third, the data analyses in section 4.3 provide an answer to the research question 2, by showing how the family-to-work role conflict play a role in understanding the relationship between employment adjustment and caregivers' mental health. First, employment adjustment is positively associated with family-to-work role conflict (supporting Hypothesis 2). Second, the family-to-work role conflict is also positively associated with the mental health of employed family caregivers (supporting Hypothesis 3). Last and most importantly, the family-to-work role conflict consistently serves as a significant mediator of the relationship between employment adjustment and four indicators of caregivers' mental health (supporting Hypothesis 4).

Fourth, the data analyses in section 4.4 answer the research question 3 regarding the moderating role of workplace support. Workplace support is identified as a positive impact, because when participants can receive workplace support, their employment adjustment tends to create less family-to-work role conflict, and further leads to less negative mental health issues. A series of moderated-mediation analyses show that workplace support mainly works as a moderator on the relationship between employment adjustment and the family-to-work role conflict (supporting Hypothesis 5), instead of on the relationship between family-to-work role conflict and caregivers' mental health (fail to support Hypothesis 6) or the relationship between the employment adjustment and caregivers' mental health (fail to support Hypothesis 7).

Chapter Five: Discussion

5.1 Introduction

With the aging of the Canadian population, the need for family caregiving is increasing, both at home and in the greater community. Many Canadian family caregivers are also employed outside the home and must take on both caregiving and work responsibilities. Employed family caregivers often make employment adjustment, such as reducing working hours or taking less demanding jobs, to accommodate their caregiving responsibilities. Although the mental health of family caregivers is an important aspect of the experience of caregiving, the association between employment adjustment and the mental health outcomes of employed family caregivers has been understudied.

The overall objective of this study is to understand the relationship between employment adjustment and the mental health of family caregivers in Canada. Based on an extensive and intensive literature review, and the theoretical perspectives of role theory and stress process model, this study also examines the effects of family-to-work role conflict and workplace support on the relationship between employment adjustment and mental health outcomes of family caregivers. Therefore, this study developed a conceptual moderated-mediation model involving three research questions and seven research hypotheses, which was then examined with the GSS 26 data set based on a selection of 1,696 participants.

The data analyses revealed that family caregivers' employment adjustment is significantly associated with their mental health outcomes, including self-rated mental health, psychological symptoms, life stress, and caregiving stress. Employed family caregivers with more employment adjustments tend to report worse mental health conditions. This result answers the first research question and supports the first hypothesis. The findings also indicate the mediating effect of family-to-work role conflict between employment adjustment and mental health outcomes. Family caregivers with more employment adjustment tend to experience higher levels of family-to-work role conflict, which is further related to worse mental health outcomes. This answers the second research question and supports the second, third, and fourth hypotheses. In addition, workplace support serves as a moderating factor in the association between employment adjustment and family-to-work role conflict, such that employed family caregivers report a lower level of family-to-work role conflict when workplace support is available. However, the moderating effect of workplace support is not identified in the association between family-to-work role conflict and mental health outcomes, or the association between employment adjustment and mental health. Therefore, the relevant results answer the third research question and support the fifth hypothesis, but not the sixth or seventh hypotheses.

To summarize, the research objective is essentially fulfilled through data analyses of the GSS 26. The results illustrate a significant association between employment adjustment and family caregivers' mental health, a mediating effect of family-to-work role conflict on the association between employment adjustment and mental health outcomes, and a moderating influence of workplace support on the relationship between employment adjustment and family-to-work role conflict.

5.2 Discussion of the Findings

5.2.1 The Mediating Effect of Family-to-Work Role Conflict

The results of the data analyses indicate that employment adjustment is significantly associated with negative mental health outcomes, and that family-to-work role conflict fully mediates the association between employment adjustment and self-rated mental health of family caregivers, and partially mediates the associations between employment adjustment and other mental health indicators such as psychological symptoms, life stress, and caregiving stress. Therefore, this study confirms the mediating effect of family-to-work role conflict between employment adjustment and mental health outcomes.

Employment Adjustment and Mental Health. Employment adjustment is significantly negatively associated with the mental health condition of employed family caregivers. The results of the data analysis shown in Table 3, Table 4, Table 5 and Table 6 confirm that those who make more employment adjustments are more likely to report worse self-rated mental health, more psychological symptoms, and higher levels of life stress and caregiving stress. These results are consistent with previous studies examining the relationship between changes in work status and family caregivers' mental health conditions (Bourke et al., 2010; Longacre et al., 2016).

Based on the caregiving stress process model (Pearlin et al., 1990), the actions caregivers take in order to cope with stress can affect caregiving outcomes directly or indirectly depending on their effects on stressors. Ideally, when family caregivers make employment adjustment, they will have more time and energy to provide care, and will then be better able to manage their caregiving situations. However, Pearlin and Bierman (2013) also stated that some actions taken to deal with stressors, particularly those actions related to both personal and social contexts, may "inadvertently exacerbate the situation or intensify its mental health impact"(p. 330). Employment adjustment is an action related to both personal family life and employment context. Although employment adjustments can produce more time and energy for caregiving, they may also create other stressors that negatively affect mental health outcomes.

Some factors can partly explain the association between employment adjustment and mental health. One such new stressor is financial concerns, as when employed family caregivers adjust their work schedules, especially by reducing employment to fulfill their caregiving responsibilities, they are more likely to suffer reductions in their income and potential future financial constraints such as loss of pension entitlement (Schofield et al., 2013). For example, Bittman, Hill and Thomson (2007) estimated that in Australia, the average annual income penalty of family caregivers who made employment adjustment could be as much as 30% of the income of non-caregivers. Earle and Heymann (2012) also estimated that family caregivers in the United States are 29% more likely to experience wage loss due to caregiving for older adults or adults with disabilities. Worry and concern related to both current and future financial security may thus negatively affect caregivers' mental health.

Family caregivers may make employment adjustment due to the high demands of caregiving, and after making employment adjustments may spend more time on caregiving tasks for their aging family members or friends. For example, based on the four waves of the English Longitudinal Study of Aging data, King and Pickard (2013) stated that employed women in their 50s who take more than 10 hours for caregiving are less likely to remain in employment than those who do not take any caregiving responsibility. However, this pattern is not identified among employed women who take less than 10 hours for caregiving. The association between time commitment to caregiving and mental health outcomes has been long established (Gaugler, Davey, Pearlin, & Zarit, 2000). When more time is spent on caregiving, family caregivers tend to experience isolation, loss of social ties, and decreases in mental health, including more psychological symptoms such as distress and depression. For example, Cannuscio and colleagues (2004) found that more time commitment and few social ties are associated with a dramatic elevation in depressive symptoms among female employed family caregivers.

In addition, after making employment adjustment, employed family caregivers might lose resources, opportunities, and work-related social connection, which are beneficial to their mental health. For example, employed family caregivers can benefit from employment-associated services and positive interaction with others in the workplace (Martire & Stephens, 2003). Family caregivers might also see their time in the workplace as respite or non-caregiving time, which can temporarily release them from their caregiving burden (Hansen & Slagsyold, 2015). Employment adjustment may affect employed family caregivers' opportunities to enjoy positive experiences and contact with others, which can buffer the negative outcomes of family caregiving.

Although employment adjustment can serve as a coping strategy, it does show a negative relationship with family caregivers' mental health outcomes. In addition to the understanding of this relationship provided by the existing evidence, this study also allows us to further understand this association by identifying the mediating effect of family-to-work role conflict.

Family-to-Work Role Conflict as Mediator Between Employment Adjustment and Mental Health. This study aligns with the results of previous studies (Glavin & Peters, 2015; Wang et al., 2013) related to family caregivers' mental health outcomes and provides further evidence for the association between family caregiving and negative mental health consequences based on family-to-work role conflict. The data analysis shows that employment adjustment is significantly correlated to family-to-work role conflict as reported by participants. Therefore, this study supports the theoretical assumption based on the inter-domain transition proposed by Matthews and colleagues (2010; 2014) that employment adjustment due to family caregiving is associated with increased family-to-work role conflict. When employed family caregivers make employment adjustments, their caregiving responsibilities are influencing their work performance and even their career development, which in turn increases their feelings of role conflict from caregiving to work. Also, making employment adjustments to accommodate family caregiving limits caregivers' ability to carry out responsibilities related to employment due to reduced time and energy. This forms the perception of role conflict from caregiving to employment.

Major and Morganson (2011) pointed out that those behaviors or coping strategies related to inter-domain transitions tend to be episodic coping strategies rather than preventive strategies. Furthermore, inter-domain transitions do not actually alleviate or address the demands of different roles, instead leading to increased role conflict (Matthews et al., 2014). Therefore, although making employment adjustment may address the demand of caregiving, it does not address the demand of the workplace. So that family caregivers experience increased feelings of family-to-work role conflict.

Several studies have indicated that even after family caregivers have made employment adjustments, the demands of family caregiving may continue to increase. Jansen and colleagues (2004) found in their 8-month follow-up study that changes in the number of work hours among full-time workers were significantly associated with higher work-home interference over time. Similarly, when employees worked fewer hours, family demands often increased, suggesting an association between work time changes and role conflict. In addition, Pavalko and Artis (1997) noted that after women become family caregivers, they tend to reduce or stop employment, and they would often have difficulty making up for the hours lost due to caregiving. Therefore, family caregivers who make employment adjustments may give the impression that they are willing to take on more caregiving responsibility, and the demands of caregiving increase, which further affects their ability to carry out work-related responsibilities.

In addition, the data analyses confirmed the significant positive association between family-to-work role conflict and worse mental health outcomes among employed family caregivers, which supports the assumptions from stress process model (Pearlin et al., 1990). The findings in the current study also resonate the existing literature (Allen et al., 2000; Frone, 2000; Zhang, Griffeth, & Fried, 2011). For example, Glavin and Peters (2015) based on Canadian sample, pointed out that family-to-work role conflict is significantly associated with psychological distress.

Family caregivers may find pressure in enacting the conflicting roles, since either caregiving or working can be demanding. They may experience fatigue, burnout and even physical problems due to increased role conflict (Sharma, Chakrabarti, & Grover, 2016). With those negative consequences, family caregivers might find it more difficulty and stressful to manage caregiving or balance work and family. Also, family caregivers with a higher level of role conflict may adopt adverse health behaviors or negative coping strategies to deal with the competing demands from caregiving and work. For example, using drinking to copy with increased role conflict is identified among general population (Allen et al., 2000), and Rospenda, Minich, Milner, and Richman (2010), also find that family caregivers with higher level of social burden (represented by caregivers' feeling of conflict in their work and family lives due to caregiving role) tend to increase drinking behaviors. For employed family caregivers, increased sense of family-to-work role conflict may increase their negative feelings (e.g., resentment, dissatisfaction) of being family caregiver or to caregiver receivers, particularly when making employment adjustment is not their own choice, but due to the increasing demand of caregiving or limited other support (Campbell et al., 2008; Williams, Morrison, & Robinson, 2014). Those decreasing in positive and healthy behaviors and increased negative attitudes due to role conflict would make employed family caregiver more vulnerable to negative mental health consequences.

To sum up, in this study, the family-to-work role conflict functions as a mediator in the association between family caregivers' employment adjustment and their mental health outcomes. More specifically, family caregivers who make more employment adjustments would perceive higher levels of family-to-work role conflict, which is associated with worse mental health outcomes.

5.2.2 The Moderating Effect of Workplace Support

The moderating function of workplace support in a caregiving context has been examined in many previous studies (Brown & Pitt-Catouphes, 2016; Dembe et al., 2011; Gordon et al., 2012; Kim et al., 2013; Wayne et al., 2013), and this study sheds further light on the effect of workplace support on family caregivers' mental health.

Moderating Effect on Relationship between Employment Adjustment and Family-to-Work Role Conflict. The data analyses in this study reveal that workplace support can buffer the association between employment adjustment and family-to-work role conflict. In other words, when employed family caregivers make employment adjustment due to family caregiving responsibilities, the availability of workplace support lessens the probability of experiencing family-to-work role conflict, as compared to those who do not have workplace support. This result is consistent with several previous studies of the protective function of workplace support in role conflict.

Workplace support can lessen role conflict by enabling employed family caregivers to control their working hours or schedules, which provides them more opportunities to balance work and family (Duncan & Pettigrew, 2012; Jansen et al., 2004). For example, based on a study within a U.S. company, Kelly and colleagues (2011) pointed out that workplace initiatives such as flexible working schedules help employees control their schedules, further reducing work-family role conflict and improving work-family fit. Jansen and colleagues (2004) also pointed out that the opportunity to take one day off when needed is an example of autonomy or control over work hours that can help employees better combine work and family life. Scharlach (1994) further noted that employed family caregivers desire to fulfill both caregiving and working roles and responsibilities, rather than reducing their involvement in either caregiving or working. Therefore, when workplace support is available, such as flexible schedules or the option to work from home, employed family caregivers can better deal with the need to fulfill both their caregiving responsibilities and their working responsibilities.

In addition, workplace support can help employed family caregivers reduce the demands of workplace and job tasks. Several researchers have pointed out that when employees work in supportive workplaces that understand their family responsibilities, they tend to regard their workplace as resources rather than as work-related demands (Warren & Johnson, 1995). When the workplace or supervisor can provide sufficient support or resources, employed family caregivers can better cope with the demands of the workplace and have more confidence in doing so. In addition, employed family caregivers can negotiate with their supervisor or co-workers about their working arrangements, and may even obtain some concessions from their employers.

Behson (2002) also confirmed that greater use of workplace support to accommodate family needs is indirectly associated with job satisfaction. A supportive workplace experience also promotes healthy interactions between employed family caregivers and their supervisor or co-workers (Lapierre & Allen, 2006). According to the dynamics of spillover between employment and family (Dilworth, 2004; Stephens, Franks, & Atienza, 1997), employed family caregivers' positive experiences in the workplace would boost their ability to manage family caregiving. As a result, the demanding from family caregiving may decrease, and a lower level of family-to-work role conflict follows.

Moderating Effect on Relationship between Family-to-Work Role Conflict and Mental Health. The results of data analyses failed to support the moderating effect on the relationship between family-to-work role conflict and mental health outcomes. The different types of workplace support studied in the current study and previous ones may help explain. For example, Li and associates (2015) focused on supervisor support, while Edwards and colleagues (2002) emphasized positive work experience. For this study, workplace support is represented by workplace policies relating to flexible schedules and family leave. Family caregivers may benefit from different types of workplace support in different ways.

Also, The different groups of participants studied may also influence the results. The participants in this study are employed family caregivers supporting aging family members, while Li and associates (2015) interviewed caregivers for people with disabilities, and other studies have focused on general employees (Lingard & Francis, 2006).

Moderating Effect on Relationship between Employment Adjustment and Mental Health. The moderating effect on the association between employment adjustment and mental health is also not supported in the current study. As discussed in the previous section, many factors can help understand the association between employment adjustment and mental health outcomes. The current study identified the mediating effect of family-to-work role conflict between employment adjustment and mental health, and included it in the moderated-mediation analysis. However, many other factors were not included in the current study, and it is hard to tell whether the workplace support can address those factors, such as financial strain (Bittman, et al., 2007). For example, the workplace support may not be able to help employed family caregivers maintain income by providing them part-time work option. Therefore, the unidentified moderating effect of workplace support in this section further calls for future research to better understand the relationship between employment adjustment and mental health outcomes of family caregivers.

To sum up, in this study, workplace support moderates the relationship between employment adjustment and family-to-work role conflict, but does not moderate the relationship between employment adjustment and mental health outcomes, or the relationship between family-to-work role conflict and mental health outcomes. Therefore, when family caregivers make employment adjustment, they are less likely to experience family-to-work role conflict, and further less likely to have negative mental health outcomes, if there is workplace support available.

5.3 Research Contribution

This study extends the body of knowledge on the impact of family caregiving on family caregivers' mental health. Building upon previous theories and existing literature, study findings demonstrate that employment adjustment is negatively related to family caregivers' mental health. In addition, the perceived family-to-work role conflict can help explain the relationship between employment adjustment and caregivers' mental health, and available workplace support buffers their relationship.

The first contribution of this study is the examination of the association between employment adjustment and family caregivers' mental health. Employment as one important factor related to caregiving outcomes has been widely studied (Hansen & Slagsvold, 2015;

Stephens et al., 1997), but employment adjustment receives limited attention in the caregiving study regarding mental health outcomes of family caregivers. Also, the available studies on the impact of changes in employment status on caregivers' mental health tend to focus on retired family caregivers, rather than those who are still employed (Longacre et al., 2016; Szinovacz & Davey, 2004). The current study conducted data analysis based on five different types of employment adjustment, and also focused on participants who were still active in labour market. In addition to the confirmed negative association between employment adjustment and family caregivers' mental health, this study provides further empirical evidence to understand how the employment related factors affect family caregivers' mental health in caregiving situation. Therefore, the employment adjustment, as potential coping strategy to deal with family caregiving responsibilities and relevant burden, may increase the possibility that family caregivers experience negative mental health consequences.

The second contribution of the current study is the application of inter-domain transition concept in family caregiving study. The inter-domain transition concept explains the impact of resources transition between different life domains on individuals' perception of role conflict (Matthews et al., 2010, 2014), and this concept provides a different perspective to understand the antecedents of caregiving outcomes, such as employment adjustment. Previous studies tend to examine employment adjustment as outcome of family caregiving (DeRigne & Porterfield, 2017), and may miss the fact that employment adjustment has further impact on family caregivers' mental health. The current study applied the inter-domain concept and provided important evidence to understand the family caregivers' mental health outcome through the impact of employment adjustment and also through the perceived role conflict between family and work domains due to employment adjustment. Relevant findings related to the mediating effect of family-to-work role conflict between employment adjustment and caregivers' mental health in this study also suggest that further studies are needed to explore the function of role conflict between family and work in caregiving context.

The third contribution of the current study is the discussion related to the protective function of workplace support. In this study, the moderating effect of workplace support was only identified between employment adjustment and family-to-work role conflict. Since the workplace support in this study was conceptualized based on formal workplace policy, this may suggest that formal workplace policy can better support employed family caregivers when they need to make the actions related to employment adjustment. This helps explain the mechanism of the protective function of workplace policy in supporting employed family caregivers to balance work and caregiving. In addition, relevant findings specified the protective function of formal workplace policy on the role conflict, which can help employers and policy makers to provide tailored support to employed family caregivers.

The current study proposed a moderated-mediation relationship as a theoretical framework to examine the association between employment adjustment and mental health of family caregivers, and to test the mediating function of family-to-work role conflict and moderating effect of workplace support. This theoretical model, along with the findings in this study, not only provides one more perspective, but also solid theoretical and empirical evidence to facilitate an understanding of the impact of family caregiving on caregivers' mental health in respect to employment adjustment, role conflict and workplace support.

5.4 Implications for Public Policy and Social Work Practice

This study examines the association between employment adjustments and mental health outcomes of employed family caregivers, while also considering the impact of family-to-work role conflict and workplace support. The findings of the study provide some evidence and insights for social work practitioners and policymakers to better support employed family caregivers.

One outstanding finding in this study is the buffering function of workplace support between employment adjustment and family-to-work role conflict, which further affects family caregivers' mental health consequences. In this study, workplace support is realized through family-friendly or caregiver-friendly policies, which allow employed family caregivers to make flexible working arrangements or give them more time to stay at home supporting their families. The interaction between employment adjustment and workplace caregiver-friendly policies significantly affects the perception of family-to-work role conflict among family caregivers. As discussed above, employed family caregivers can benefit from supportive work environments in which they are able to control their working schedules and plans, and use workplace resources dealing with competing demands of both work and family caregiving.

In Canada, considerable relevant support and policies are available, and many studies of the Canadian context have demonstrated the effects of these resources on caregivers. For example, as indicated by Lero and colleagues (2012), the majority (89%) of the employers in their study offer some kind of flexibility, 74% of employers allow some employees to work reduced hours for certain time periods, and 51% of employers permit extended career breaks for caregiving. Another study conducted by Sethi and Williams (2018) also reported that about 70% of the workplaces they surveyed offer support services, 50% provide flexible and customizable work schedules, 40% offer financial assistance/relief, 30% allow unpaid leave, and 27% grant paid leave.

However, policy makers and service providers still have much work to do. For example, Ireson and associates (2018) identified several major barriers for employees access to those supportive policies, including limited information and awareness, employers' lack of knowledge of caregiving challenges, and one-size-fits-all policies that affect support to family caregivers. Also, some companies do not effectively provide tailored caregiver-friendly workplace support to caregivers for aging people (Williams et al., 2017). Another study conducted in Ontario (Lin, Durbin, & Selick, 2016) reported that 34.6% of family caregivers indicated that their employers were considerably supportive of their caregiving role, but 30.2% of caregivers still receive little or no support from employers. In addition, in their study of employers and HR professionals in several provinces in Canada, Vuksan, Williams and Crooks (2012) found that larger workplaces are more likely to have formal family-friendly policies such as employee end-of-life care leave, while smaller workplaces tend to have less formal policies but more informal support such as flexible working hours. Therefore, programs such as advocacy, campaign, and social education are still required to emphasize the importance of workplace support to employed family caregivers, and to increase the awareness of the need for workplace support among employers and society in general.

In their evaluation of caregiver-friendly workplace policy interventions, Williams and colleagues (2017) proposed carrying out knowledge translation activities such as community workshops for Canadian employers and HR personnel, and government and policy makers. The main purposes of this suggestion are to educate on, and advocate for, caregiver-friendly workplace policies. Lin and associates (2016) also underscored the need to engage with employers to promote workplace responsiveness to family caregiving needs for their employees. One example of this sort of education and advocacy is the report "Toolkit for employers:

resources for supporting family caregivers in the workplace," prepared by the Family Caregivers' Network Society (2013) of British Columbia, which includes information relating to the impact of caregiving and local resources to support employed family caregivers. Similarly, in the Mobilizing Action project of Family Caregivers in Canada (2015), employers and workplaces are important stakeholders, and creating caregiver-friendly workplaces is a priority, with the recognition and promotion of strategies to support employed family caregivers. Therefore, policy makers and service providers can take different actions to promote the provision of workplace caregiver-friendly policy and services.

So far, aside from Compassionate Care Benefit and Caregiver Credit, Canada does not have a nationwide policy or regulation to support family caregivers. Moreover, the Compassionate Care Benefit has been criticized for its limited amount of financial compensation and restrictions such as previous working duration and hours or the health condition, such as terminal illness, of the family member needing care (Flagler & Dong, 2010; Keefe, 2011). Many family caregivers work part-time or are self-employed, and only a fraction of family caregivers are eligible to apply for the Compassionate Care Benefit (Fast, 2015; Williams et al., 2011). Also, the Compassionate Care Benefit mainly supports employees who are caring for family members at the end of their lives, even though the family caregiving process is often long-term, and the 26 weeks of Compassionate Care Leave that are provided under this program may not be enough for employed family caregivers.

The UK and Australia have developed national regulations and strategies to better support caregivers, allowing "caregivers to request flexibility in the workplace, and working with employers to show the financial and organizational benefits of better supporting caregivers in the workplace" (National Institute on Aging, 2018, p. 47). In the United States, Feinberg and AARP

(2018) also suggest promoting workplace leave policies, such as paid family leave for senior and adult care, in order to support employed family caregivers. Therefore, it is important for the Canadian government and employers to work together to create more caregiver-friendly policies, such as flexible work arrangement and paid family leave for senior care, to help family caregivers fulfill their family responsibilities, maintain their career development, and attain a healthy work-family balance.

Besides the work to advocate for public policy for employed family caregivers, and to promote caregiver-friendly workplace culture, social workers can also provide direct service to employed family caregivers at community level related to the effects of caregiving on family caregivers' participation in the labour force (Nguyen & Connelly, 2014; Schneider et al., 2013). Based on the situation of Canadian family caregivers, Canadian Association of Retired Persons (2012) has proposed provision of financial support, workplace protection for caregiving, respite care options for heavy care providers, funding for home care, and integrated training and support for caregivers within the formal health care system.

Respite care is one widely discussed program to support employed family caregivers. Respite time can be very important for employed family caregivers in order to manage the divisions of their time between work, caregiving, and family life. One study that specifically focused on the benefit of respite time use among employed and non-employed family caregivers indicated that employed family caregivers were more satisfied with their respite time use than their non-employed counterparts (Utz, Lund, Caserta, & Wright, 2012). This study also suggested that, compared to unemployed family caregivers, employed family caregivers would gain more personal benefits from respite time, because they were more likely to do the activities they wanted or planned to do during their respite time. Normally, employed family caregivers use respite time to conduct work-related tasks, and they also expressed the desire to use respite time for household work, exercise, or socializing with friends (Lund, Utz, Caserta, & Wright, 2009).

Moreover, respite care helps family caregivers remain longer in the labour market with limited working accommodations or employment adjustment. For example, among the different types of respite care, day care respite service is most suitable for employed family caregivers, and employed family caregivers tend to rely on day care services to complement their paid work (Jarrott, Zarit, Stephens, Townsend, & Greene, 2000). With the help of day care centres, caregivers do not need to frequently reduce their working hours or re-schedule their working shift, and can consequently better deal with the balance between working and caregiving. Moreover, employed family caregivers may have less reason to worry about financial loss due to reduced working hours or withdrawal from the labour market. The Canadian Healthcare Association (2012) has commented that while some respite care is provided and funded through home care programs, most respite care is paid for by the families that need it. Although different provinces have different regulations concerning respite care, certain issues still exist. For example, in 2010, Alberta introduced the Alberta Caregiver Support and Enhanced Respite Demonstration Project to assess the needs of family caregivers and provide them with flexible respite options, but short-term respite services are still relatively difficult to obtain (Canadian Caregiver Coalition, 2014).

Therefore, public policy makers, social workers, and relevant service providers must advocate for and further provide more services and programs to support employed family caregivers in dealing with various caregiving tasks and in better balancing caregiving and work.

5.5 Limitations of Current Study and Suggestion for Future Research

There are several important limitations in this study that require clarification. Although this study focused on employment adjustment and workplace support, there has not been a consensus as to how to measure these two factors. As indicated in my literature review, scholars do have an understanding of what employment adjustment and workplace support represent, but the measurements vary in different studies. For example, in the survey conducted by National Alliance for Caregiving and the AARP (2015), employment adjustment indicators include reducing work hours, finding less demanding jobs, turning down promotions, taking leaves of absence, and early retirement; however, the indicators are narrower in other studies, referring only to work-hour reduction or early retirement (Humble, Keefe, & Auton, 2012; Lerner et al., 2017). This study includes five different changes or reactions in the workplace to represent the employment adjustment from the original GSS 26 data set. Based on the available literature, these five indicators together can represent employment adjustment. However, one potential outstanding concern is related to a comparison between this study and other studies, since they use different scales or indicators to measure employment adjustment. The measurement of workplace support also shares the same issue. Many studies have focused on supervisor and co-worker support (Bakas et al., 2014; Honda et al., 2014; Lapierre & Allen, 2006), while others have focused on organizational level policies (Lingard & Francis, 2006; Wayne et al., 2013; Zacher & Schulz, 2014), and in this study, workplace support is measured by formal organizational policy.

To date, there have been numerous studies of employment adjustment and workplace support. Thus, a systematic review or scoping review of the conceptualizations and measurements of these caregiving factors, which could deepen the study and encourage further research in the family caregiving field, is needed. Using the same or similar conceptions and measurements of employment adjustment and workplace support would make comparisons between studies and summarizations of findings easier.

Another limitation of the current study is related to the use of a secondary data source. One drawback of secondary data analysis is that researchers may need to compose their research questions or hypotheses based on the available information in the secondary data set. Cheng and Phillips (2014) have outlined two general approaches to secondary data analysis: the research-question-driven approach and the data-driven approach. In the research-question-driven approach, researchers propose a research question first and then search for appropriate existing data sets. In the data-driven approach, researchers form their research questions based on the data set and available variables. For this study, the GSS 26 survey collects comprehensive information on caregiving and its various consequences. Therefore, this study essentially takes the research-question-driven approach with little compromise in the research purpose and questions. However, due to the data collection procedure of the original survey, some participants were excluded from the data analysis. For example, some employment-related information was collected only from participants who assumed their main activity was working in the past 12 months before the survey was administered. Because this study also focuses on employment adjustment and workplace support, participants who occupy both employee and caregiver roles but assumed their main activity was not working would therefore not be included in the data analysis.

Furthermore, this study is based on a cross-sectional data set, which limits the possibility of exploring the causal relationship among interested variables. If possible, future studies of the impact of employment adjustment on caregivers' mental health should use longitudinal data, which can better support the exploration of causal relationships. Another benefit of longitudinal data is the possibility of tracking changes in the interested variables over time, such as employment adjustment or mental health conditions. Thus, the role of employment adjustment and the process of role transition can be better understood within a certain period of time.

Another potential limitation of quantitative study or secondary data analysis in the social work profession is the possibility that the secondary data may not always be applicable to the ideas of person-in-environment (PIE). Person-in-environment, a key foundation of social work practice and research, emphasizes the mutual relationship and transaction between human behaviour and the socio-ecological environment (Green & McDermott, 2010; Rogge & Cox, 2002). Based on PIE, social workers try to understand the interactions between people and their changing environments and contexts, in order to find out how the environment shapes individuals' lives. The GSS 26 data set is comprehensive, but still lacks some key information related to the participants' socio-ecological environments. For example, GSS 26 does not collect information related to participants' cultural beliefs, particularly their beliefs about family or filial piety, or their attitudes to family caregiving. These cultural beliefs and attitudes have been widely studied, and have tremendous influence on family caregivers' well-being outcomes (Aranda & Knight, 1997; Sayegh & Knight, 2011). Therefore, the absence of these factors may affect the data analysis. For instance, even though participants' cultural backgrounds and beliefs related to family caregiving might affect their employment adjustment and mental health outcomes, this study was unable to control for these relevant factors. Future research on this topic should collect relevant information on cultural beliefs, particularly since Canada is a multi-cultural country.

Many previous studies have revealed the different experiences of family caregiving between female and male individuals, regarding to the mental health outcomes and the workplace experience (Hegewisch & Gornick, 2011; Hirschfeld & Wikler, 2003; Lahaie et al., 2013; Neal et al., 1997; Reid & Hardy, 1999). For instance, Hegewisch and Gornick (2011) suggested the possibility that "work-family policies could worsen some women's labor market outcomes - especially job/occupational segregation and/or the gender wage gap" (p. 130). They further discussed that the work-family policies, such as the leave and part-time work options, would affect females' career advancement and their human capital accumulation. Therefore, it is important to examine female and male separately to explore whether they have different experiences related to employment adjustment and utilization of workplace support. By gaining further understanding of the experience of female and male employed family caregivers, more tailored support can be provided to family caregivers who need to balance work and family caregiving.

5.6 Conclusion

Based on the theoretical framework built on the role theory and caregiving stress process model, this study used the GSS 26 data set to examine the mental health of employed family caregivers. The results of a series of analyses generally confirm the significant association between employment adjustment and mental health outcomes, mediating effect of family-to-work role conflict between employment adjustment and mental health, and the moderating effect of workplace support between employment adjustment and family-to-work role conflict.

Family caregiving is not just a family issue or a public health issue; it is also an economic one (AARP Public Policy Institute, 2011; Schulz & Eden, 2016). Despite the large amount of available literature on family caregiving and on various aspects of caregiving outcomes, more and further study is still needed to understand certain aspects of caregiving such as employment adjustment. The findings of this study shed some light on the mental health outcomes of employed family caregivers, and attempt to account for the influence of family-to-work role conflict and workplace support. Relevant findings also underscore the need to provide both workplace caregiver-friendly support and community-based services to promote employed family caregivers' ability to maintain a balance between work and family and maintain their mental health.

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Appendices

Appendix A

Workplace support reported by participants in GSS 26 (N=1,696, Weighted N=1,439,985)

Types of workplace support	Availability	Percentage
A flexible schedule that allows them to choose the time they begin and end their work day	No	64.61
	Yes	35.39
Their employer provides them with the option to work part-time	No	59.74
	Yes	40.26
Their employer allows them to take leave to care for spouse or family members	No	19.49
	Yes	80.51
Their employer allows them to take extended leave for personal reasons	No	18.03
	Yes	81.97
Their employer provides them with the option to telework	No	89.80
	Yes	10.20

Appendix B

Psychological symptoms reported by participants in GSS 26 (N=1,696, Weighted N=1,439,985)

Types of psychological symptoms reported		Percentage
Feel tired	No	51.79
	Yes	48.21
Feel worried or anxious	No	49.03
	Yes	50.97
Feel overwhelmed	No	70.03
	Yes	29.97
Feel lonely or isolated	No	87.60
	Yes	12.40
Feel short-tempered or irritable	No	67.50
	Yes	32.50
Feel resentful	No	82.89
	Yes	17.11
Feel depressed	No	86.10
	Yes	13.90
Experience loss of appetite	No	92.04
	Yes	7.96
Experience disturbed sleep	No	72.48
	Yes	27.52
Experience any other symptoms	No	96.31
	Yes	3.69